



STUDIA UNIVERSITATIS  
BABEŞ-BOLYAI



# PSYCHOLOGIA PAEDAGOGIA

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**S T U D I A**

**UNIVERSITATIS BABEŞ – BOLYAI**

**PSYCHOLOGIA-PAEDAGOGIA**

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## ASSESSMENT AND THE TEACHING - LEARNING PROCESS IN INCLUSIVE SCHOOLS

ALINA PREDA, VASILE PREDA

**ABSTRACT.** This article presents the findings of a study *on the comprehensive, ecological and dynamic assessment of people with disabilities and on the strategies of teaching-learning processes* in inclusive education. According to psychologists working in inclusive schools it is essential that the *comprehensive assessment* and the *elaboration and development of cognitive structures* in intellectually disabled pupils be first done in the context of practical conjectural actions. Cooperative activities involve the construction of new ideas based on personal and shared foundations of past experiences and understandings, so they naturally apply some of the principles of constructivism. Cooperative learning and collaborative learning are the strategies that could clearly aid in the classroom management. The modern theoretical direction and the most efficient practice in inclusive education are based on the Socio-Constructive Theory; the Learning Potential Assessment Device; Instrumental and Cognitive Modification; Mediation Theory; Collaborative Teaching and Interactive Learning Environments.

**Keywords:** comprehensive assessment, teaching-learning process, constructivism, cognitivism, cooperative learning, collaborative learning, knowledge construction, inclusive education.

**ZUSAMMENFASSUNG: BEWERTUNG UND DER LEHR-LERNPROZESS IN MITEINBEZIEHENDEN SCHULEN** Unser Beitrag präsentiert sowohl die Ergebnisse der Forschung, in was eine allumfassende, schonend behandelnde und zugleich dynamische Bewertung der Behinderten betrifft, als auch die Strategien die im Lehr-Lernprozess einer miteinbeziehenden Erziehung vorkommen. Laut den Psychologen, die in miteinbeziehenden Schulen arbeiten, ist es besonders wichtig, eine *allumfassende Bewertung* und eine *Ausarbeitung und Ausführung von kognitiven Strukturen*, in was die intellektuell unterbegabten Schüler betrifft, erst in einem vermutlich praktischem Kontext zu vollziehen. Miteinbeziehende Aktivitäten behaupten unter anderen den Aufbau von neuen Ideen, die sowohl auf der Basis persönlich durchlebten, als auch auf erworbenen Erfahrungen begründet sind, so dass diese Schüler natürlicherweise manche Prinzipien vom Konstruktivismus benutzen. Das kooperative und das kollaborative Lernen sind Strategien, die in der Klassenorganisation besonders behilflich sein können. Die moderne theoretische Richtung und die wirksamste Praxis in der miteinbeziehenden Erziehung beruhen auf der Sozial-Konstruktiv Theorie, auf der von der Bewertung der Lernfähigkeit bestimmten Verfahrensweise, auf der instrumentalen und kognitiven Beeinflussung, auf der Vermittlungstheorie, auf kollaboratives Lehren und interaktives Lernmilieu

**SCHLÜSSELWÖRTER:** allumfassende Bewertung, Lehr-Lernprozess, Konstruktivism, Kognitivism, kooperatives Lernen, kollaboratives Lernen, Kenntnissaufbau, miteinbeziehende Erziehung.

## 1. Introduction

One of the major reform issues facing the field of education is that of **inclusion**. The concept of inclusion involves bringing services to students, rather than moving students, who will benefit from being in the class, rather than having to keep up with other students in the class.

Many researchers and policy makers have advocated an increase in the extent to which students with disabilities are integrated into regular education setting. They advocate a shared responsibility and commitment between regular and special education and the use of effective special education techniques beyond the special class setting.

**Opponents of Regular Education Initiative (REI)** raised a number of important issues and concerns, including the ability of students with mild disabilities and other students with special needs to succeed in regular classrooms, the ability of regular educators to cope with the demands of the proposed initiative, and effects of what they saw as wholesale mainstreaming.

**Proponents of REI, of inclusive education,** suggested a variety of reasons for merging regular and special education. These included inadequacy of conventional methods, problems with categorical programs, and the disjointedness of current efforts and programs.

**The Regular Education Initiative and the inclusive education** presents an opportunity for regular and special educators to work together to develop effective instructional options for diverse student populations.

**Full inclusion** is based on the premise that students with disabilities should be educated in regular classrooms in their neighborhood or home schools. It is assumed that instruction and technological support are available for students in the neighborhood schools, which makes it unnecessary for them to attend other schools (Olson, Platt, 1996, p. 13-14).

**Inclusion** is justified for several reasons: it is a right of all students; students with disabilities learn social skills and benefit from friendships with peers; nondisabled students also benefit, as inclusion permits friendships among diverse students; all children can learn to understand human differences (Both, Ainscow, 2007).

According to psychologists working in inclusive schools, it is essential that the *comprehensive assessment* and the *elaboration and development of cognitive structures* in intellectually disabled pupils be first done in the context of practical conjunctural actions (Hemmingsson, Gustavsson, Townsend, 2007). The modern theoretical direction and the most efficient practice in inclusive education are based

on the Socio-Constructive Theory; the Learning Potential Assessment Device; Instrumental and Cognitive Modification; Mediation Theory; Collaborative Teaching and Interactive Learning Environments.

## 2. Comprehensive Assessment in Inclusive Education

**Assessment** is complex process that needs to be conducted by multidisciplinary teams of trained professionals, as it involves both formal and informal methods of collecting information about the student. An evaluation for inclusive education should always be conducted on an individual basis. When completed, it is a **comprehensive assessment** of the child's abilities. The child must be assessed in all areas related to suspected disability, including, where appropriate, health, vision, hearing, motor abilities, general intelligence, academic performance, communicative status, social and emotional status.

A **comprehensive assessment** should normally include many of the following (Pierangelo, Giuliani, 2006, p. 10):

- \* An individual *psychological evaluation* including general intelligence, type of intelligence (Gardner, 1993), learning style, instructional needs, learning strengths and weaknesses, and social-emotional dynamics;
- \* A thorough *social history* based on interviews with parents and students;
- \* A thorough *academic history* with interviews or reports from past teachers;
  - \* A *physical examination* including specific assessments that relate to vision, hearing, and health;
  - \* A *classroom observation* of the student in the current educational setting;
  - \* An appropriate *educational evaluation* specifically pinpointing the areas of deficit or suspected disability including, but not limited to, educational achievement, academic needs, learning strengths and weaknesses, and vocational assessments;
  - \* A *functional behavioral assessment* to describe the relationship between a skill or performance problem and variables that contribute to its occurrence. The purpose of a functional behavioral assessment is to gather broad and specific information in order to better understand the specific reasons for the student's problem behavior;
    - \* *Auditory and visual discrimination tests*;
    - \* *Speech and language evaluations*, when appropriate;
    - \* *Physical and/or occupational evaluations*, when indicated;
    - \* *Examining school records* and past evaluation results;
- \* Assessment of *classroom performance*;
  - \* *Evaluating curriculum requirements and options*;
- \* *Evaluating the student's type and rate of learning* during trial teaching periods;
- \* *Evaluating which skills have been and have not been mastered*, and in what order unmastered skills need to be taught;

\* *Interviewing the student and significant others* in the student's life;

\* *Using information from checklists* completed by parents, teachers, or the student

\* *Collecting ratings on teacher attitude* toward students with disabilities, *peer acceptance, and classroom climate*.

This information can be gathered in a variety of ways. These may include, but are not limited to: norm-referenced tests, informal assessment, criterion-referenced tests, standard-referenced tests, dynamic assessment, ecological assessment, curriculum-based assessment, curriculum-based measurement, portfolio assessment, authentic/naturalistic/performance-based assessment, task analysis, outcome-based assessment, and learning styles assessment (Pierangelo, Giuliani, 1999).

### ***2.1. Ecological Assessment***

**Ecological assessment** involves directly observing and assessing a child in the many environments in which he or she routinely operates. The purpose of conducting such an assessment is to probe how the different environments influence the student and his or her school performance.

Critical questions to ask in an ecological assessment include: a) in what environments does the student manifest difficulties? b) are there instances in which he or she appears to function appropriately? c) what is expected of the student academically and behaviorally in each type of environment? d) what differences exist in the environments in which the student manifests the greatest and the least difficulty? e) what implications do these differences have for instructional planning? (Pierangelo, Giuliani, 2006, p. 39).

As Wallace, Larsen and Elksnin (1992, p. 19) remark: "An evaluation that fails to consider a student's ecology as a potential causative factor in reported academic or behavioral disorders may be ignoring the very elements that require modification before we can realistically expect changes in that student's behavior". According to Overton (1996, p. 276), an ecological assessment analyzes a "student's total learning environment". A thorough ecological assessment should include the following: a) interaction between students, teachers, and others in the classroom and in other school environments; b) presentation of materials and ideas; c) selection and use of materials for instruction; d) physical arrangement and environment of the classroom or target setting; e) student's interactions in other environments.

Ecological assessment can also draw on: a) the culture and beliefs of the child; b) the teacher's teaching style; c) the way time is used in the classroom; d) academic, behavioral, and social expectations within the learning environment; e) the overall tone of the class (Bigge, Stump, 1999).

The purpose of conducting such an assessment is to probe how the different environments influence the student and his or her school performance.

## 2.2. *Dynamic Assessment*

Dynamic assessment may be framed as a *constructivist approach* to assessment. That is, the goal is to determine what students do, can do, and manage to set standards or to norm-group performance in an attempt to identify deficiencies. In dynamic assessment “the assessment focuses on student learning and performance over time, and comparisons are made between a student’s current and past performance. Additionally, dynamic assessment is concerned with learning what a student is able to do when provided support in the form of prompts, cues, or physical supports, some of which naturally exist in the environment” (Bigge, Stump, 1999, p.182). Dynamic assessment refers to several different but similar approaches to evaluating student learning. The goal of this type of assessment is “to explore the nature of learning, with the objective of collecting information to bring about cognitive change and to enhance instruction” (Sewel, 1987, p. 436).

Typically, dynamic assessment involves a test-train-retest approach. The examiner begins by testing the student’s ability to perform a task or solve a problem without help. Then, a similar task or problem is given to the student, and the examiner models how the task or problem is solved or gives the student cues to assist his or her performance. Dynamic assessment is a promising addition to current evaluation techniques. Because it incorporates a teaching component unto the assessment process, this type of assessment may be particularly useful with students with disabilities. One of the chief characteristics of dynamic assessment is that it includes a dialogue or interaction between the examiner and the student. The interaction allows the examiner to draw conclusions about the student’s thinking processes and his or her response to the learning situation (i.e. whether, with prompting, feedback, or modelling, the student can produce correct responses, and what specific means of instruction produce and maintain positive change in the student’s cognitive functioning). The interactional aspect of dynamic assessment also contributes substantially to developing an understanding of the student’s thinking process and problem-solving approach and skills (Pierangelo, Giuliani, 2006, p.42).

In Feuerstein’s model of dynamic assessment (1979) the examiner is encouraged to interact constantly with the student, an interaction that is called *mediation*, which is felt to maximize the probability that the student will solve the problem. Experiments with the *Program of Instrumental Enrichment (P.I.E.)*, carried out in many countries in the world, have proved that intelligence is not invariable (Feuerstein and collab., 1979). The psychogenetic principle of accelerating the stadial development of intelligence should be seen through the lens of Gardner’s theory of multiple intelligence (1996). This idea is further supported by research that employs activating cognitive methods, proposed by project didactics.

Research in *cognitive psychology* and in *mediation psychology* with a focus on the teaching-learning process, especially on the basis of Feuerstein’s theory and methodology put forward in 1987, have strongly influenced the understanding and the implementation of didactic principles. These emphasized the interaction between

the degree of functionality of the cognitive processes and the amount of knowledge accumulated, as well as the role played by the *metacognitive processes* in the activity of learning (Doly, 2002). Feuerstein and collab. (1979) defined the didactic relations in instructional activities as based on *mediation*, which allows educators to evaluate and mould their attitude and *teaching style* based on the particularities of cognitive architecture and function of the *student's cognitive styles and learning styles*.

### **2.3. Learning Styles Assessment**

**Learning styles theory** suggests that students may learn and problem solve in different ways, and that some ways are more natural for them than others. Learning style theory is concerned with how students learn, with the personal abilities they apply to learning tasks, and with the means by which they accommodate and assimilate new information.

Some of the common elements that may be included here would be the way in which material is typically presented (visually, auditorily, tactilely) in the classroom, the environmental conditions of the classroom, the child's personality characteristics, the expectations for success that the child and others hold, the response the child receives while engaging in the learning process (e.g., praise or criticism), and the type of thinking the child generally utilizes in solving problems (e.g., trial and error, analyzing). Identifying the factors that positively impact the child's learning may prove very valuable in developing effective intervention strategies (Pierangelo, Giuliani, 2006, p. 44).

A **learning style assessment**, then, would attempt to determine those elements that impact on a child's learning and "ought to be an integral part of the individualized prescriptive process all special education teachers use for instructing pupils" (Berdine, Meyer, 1987, p. 27).

That said, it is important to discuss aspects of diversity among students with respect to learning from two additional theoretical perspectives that bear some similarities to the earlier processing deficit theories. The first, focusing on **learning styles**, deals with the context and nature of instruction, suggesting that the instructional environment and teaching methods should be selected to support the learning style of each student. The second perspective, that of **multiple intelligences**, focuses on individual students and their innate and varying abilities to solve problems (Raymond, 2004, p. 334). In the tradition of cognitive styles research, Gardner (1996) has advanced the theory that each individual possesses at least eight distinct ways of thinking, learning and solving problems: 1) linguistic intelligence; 2) logical-mathematical intelligence; 3) musical intelligence; 4) spatial intelligence; 5) body-kinaesthetic intelligence; 6) intrapersonal intelligence; 7) interpersonal intelligence; 8) naturalist intelligence. Gardner's framework suggests that each person will vary in the means by which learning happens most effectively and by which achievement is demonstrated most clearly.

Gardner (1996) proposed that the difficulties some individuals experience in our current schooling process may actually be due to the fact that their stronger skills and intelligences lie in areas not generally tapped by common school curricula and practices. Gardner voiced caution, however, in applying the theory of multiple intelligences in a restrictive manner. When considering the theory of multiple intelligences, teachers may want to consider ways of creating learning environments that recognize and value all the intelligences rather than focusing exclusively on the linguistic and logical-mathematical form (Hoerr, 1996). It is possible to identify the particular learning style of a student and then select methods instruction that match that style, increasing the likelihood that instruction will be successful.

The work of Rita Dunn (1995) has provided the basis for most learning style assessment and procedures. They suggest that teachers need to consider the characteristics and preferences of learners as they relate to the physical environment, the method of instruction, modality preferences, motivation and feedback, and types of working groups when making instructional plans. Teachers who plan instruction in accordance with principles of universal design for learning make classroom activities suitable to most learners, despite disabilities or differences in *learning styles*.

### **3. Cognitive Teaching-Learning Strategies**

#### ***3.1. Cognitive Constructivism and Cognitive Learning Strategies***

*Cognitive constructivism* views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge. In other words, learning involves constructing one's own knowledge from one's own experiences. The teacher acts as a facilitator who encourages students to discover principles for themselves and to construct knowledge by working to solve realistic problems. *Constructivism* emphasizes the importance of the learner being actively involved in the learning process, unlike previous educational viewpoints where the responsibility rested with the instructor to teach and where the learner played a passive, receptive role. Learners do not simply mirror and reflect what they read, but construct their own understanding, look for meaning and will try to find regularity and order in the events of world even in the absence of full or complete information.

The *constructivist researchers* have increasingly acknowledged the importance of social interaction for development of the individual's cognition. Thus, the focus shifts to *cooperation and interactions* (Abrami, 1993; Slavin, 1995), *and the importance of environmental effects on the individual* (Bronfenbrenner, 1993). Researchers describe the function of shared activities (Rogoff, 1990), and highlight the influence of the context on learning and development (Bruner, 1983; Fischer, Bullock, Rotenberg, Raya, 1993).

Slavin (2000, p. 256) refers to Vygotsky's theories when he speaks about constructivist theories of learning: "Modern constructivist thought draws most

heavily on Vygotsky's theories, which have been used to support classroom instructional methods that emphasize cooperative learning, project-based learning, and discovery. Four key principles derived from Vygotsky's ideas have played an important role".

Two of them are very important for cooperative learning. Children learn, he proposed, through joint interactions with adults and more capable peers (Doise, Mugny, 1981). While working on cooperative projects children are exposed to their peers' thinking process and this method makes the learning outcome available to all. Vygotsky (1971-1972) noted that successful problem solvers talk themselves through difficult problems. In cooperative groups, children can hear this inner speech out loud and can learn how successful problem solvers are thinking through their approaches. The second key concept is the idea that children learn best the concepts that are in their *zone of proximal development*. When children are working together each child is likely to have a peer performing on a given task at a slightly higher cognitive level, exactly within the child's *zone of proximal development*. According to Vygotsky (1971-1972), the *zone of proximal development* is the difference between what a student can do alone and what he/she can do with supportive collaboration. There are implications for cooperative learning situations in a technology class in relation to this theory. First of all, it seems that according to Vygotsky (1978), all learning must take place in cooperative settings as, cognitively, connections cannot be made without this collaboration. Realistically, in a technology classroom, or in any classroom, the only instance of cooperative learning that can take place is through collaboration.

**Teaching strategies** using *social constructivism* as a referent include teaching in contexts that might be personally meaningful to students, negotiating taken-as-shared meanings with students, class discussion, small-group collaboration and insist on valuing meaningful activity over correct answers. Emphasis is growing on teacher's use of multiple epistemologies to maintain dialectic tension between teacher guidance and student-initiated exploration, as well as between social learning and individual learning (<http://wik.ed.uiuc.edu/index.php/Social> Constructivists' Approach to Classroom Discipline).

For *constructivists* learning is not the result of development; *learning is development* (Fosnot, 1996, p.29). Interindividual differences are usually expressed during higher level processes, namely *metacognition processes*, which, however, can only be generalized if they may be put into practice in a wide array of domains. Metacognition is essential in knowledge acquisition and in problem-solving learning (Corkill, 1996; Doly, 2002).

### **3.2. Teaching through Cognitive Apprenticeship**

**Cognitive Apprenticeship** is aimed primarily at teaching processes that experts use to handle complex tasks; the focus is on learning through guided experience, building on cognitive and metacognitive skills and processes. It requires

externalization of processes that are usually carried out internally and encourages development of self-correction and self-monitoring skills.

**Good teaching** demands that the student with learning disabilities be encouraged to explore learning alternatives and discover new relationships.

For *exploration*: pushing students into problem solving alone; forcing them to explore and set and revise their own goals.

For *articulation*: any method of getting the students to articulate their knowledge, reasoning, problem-solving processes (e.g. – enquiry teaching); teacher leads articulation; encourages students to articulate as they solve problems; students assumes critic or monitor roles.

For *reflection*: enabling students to compare their own problem-solving processes with those of experts, or with those of other students, and, ultimately, create their own internal cognitive model.

**Various methods**, within a framework of **Cognitive Apprenticeship** are proposed by Wood, Bruner, Ross, 1976; Brown, Collins, Duguid, 1989; Rogof, 1990):

\* **Modelling**: the expert carries out the task; the student observes and builds a conceptual model of those processes; this requires externalization of internal processes.

\* **Coaching**: the teacher observes the students while they carry out a task; offers hints; scaffolding, feedback, modelling, reminders and a new task to bring them closer to expert performance.

\* **Scaffolding and Fading**: the teacher provides support to help the student carry out the task; the teacher does the part that the student cannot manage and then gradually removes support from student. Initially the teacher models the process but then turns over to students: he coaches them by providing *scaffolding*.

**Constructivists** who favour Vygotsky's theory (1962, 1971, and 1978) suggest that social interaction is important for learning because higher mental functions such as reasoning, comprehension and critical thinking originate in social interactions and are then internalized by individuals. Children can accomplish mental tasks with social support before they can do them alone. Thus, cooperative learning provides the social support and scaffolding that students need to move learning forward (Woolfolk, 2001, p. 44).

**Mediated learning** is related to cooperative learning and to collaborative learning, which are both based on the socio-constructivist model (Vygotski, 1978). *Collaborative interactions* are characterized by united effort and continuous sharing. Interactions marked by independent activity, on the other hand, are typical to situations in which participants construct their understanding individually. The basic elements of **cooperative learning** can be considered essential to all collaborative interactions, interactive methods and collaborative activities. Baine (1991, p.101-102) describes the methods of training student tutors and aides, and provides a review of sample tutor programs and tutor teaching scripts.

**The tutor first adopts an interactive approach**: explores student competence with two general questions; verifies exact misconception in the next two; attempts

to repair misconception with a tactic called “grain of truth correction”. *Expository tutors* maintain focus and coherence; they cover the subject matter paving the way for the supports retrieval. *Procedure tutors* order subskills by selecting exercises and examples to reflect the order. A curriculum should divide the material to be learned into manageable units. It should sequence materials in a way that conveys its structure to students and ensure that instructional goals presented in each unit are achievable. Tutors should have mechanisms for evaluating the students’ reaction to instruction on a moment-to-moment basis and for reformulating the curriculum when needed (Wood and collab., 1976; Cook and collab., 2000).

### **3.3. Research Methodology**

This research is with pragmatics applications in inclusive education.

**Objectives:** 1. Making an inventory of the opinions of itinerant/support teachers regarding the role played by the educational strategies that facilitate the inclusive education of children with cognitive and/or learning disabilities.

2. Making an inventory of the opinions regarding the role and the required competencies of the itinerant/support teacher in inclusive schools.

**Participants:** 45 special education teachers and 20 psychologists from Cluj-Napoca and Sibiu.

**Hypothesis:** The special education teachers who graduated during the last 10 years are open to innovation regarding the use of formative educational strategies in inclusive schools.

**Methods of investigation:** the opinion questionnaire.

### **3.4. Data analysis.**

The analysis of the data revealed the following main objectives and competences of itinerant/support teachers in inclusive school.

**The good teaching-learning process for children with cognitive disabilities** demands:

#### **1) Perceiving learning as an active/interactive process**

- a) favouring experimentation and discovery on the part of the child;
- b) encouraging child activity and contribution;
- c) offering discreet guidance of learning attempts;
- d) favouring active child participation in classroom activities.

#### **2) Focusing on the most significant learning activities**

- a. targeting the achievement of the fundamental objectives;
- b. proposing tasks that are significant, useful, functional and immediate;
- c. maximising real situations that may be used in the process of learning;
- d. informing the child of the expected results and of the usefulness of the accumulated knowledge.

**3) *Acknowledging the contribution of previously acquired knowledge in the process of learning***

- a) taking into account the knowledge previously acquired by the child when planning the new learning sequence;
- b) providing clues that favour the reworking of previously acquired knowledge;
- c) ensuring the semantic stability of the information (in terms of meaning and form).

**4) *Privileging the visual circuit***

- a) amplifying the object's significant indices;
- b) pointing out the significant indices in the various images, charts, posters;
- c) arranging the environment so as to facilitate visualisation of the stimuli.

**5) *Drawing and controlling attention***

- a) employing significant and attractive materials;
- b) eliminating or monitoring inappropriate stimuli;
- c) making the most of verbal imagery elements.

**6) *Favouring learning by reducing task complexity***

- a) adapting properly the materials and activities;
- b) simplifying the task;
- c) employing "elementary schemes" that facilitate access to knowledge;
- d) resorting to all available competent resources: other children and teachers.

**7) *Introducing to the child increasingly difficult tasks in a reasonable way***

- a) experimenting success in order to prevent/overcome failure feelings and fear;
- b) offering the child the opportunity to choose the activity or the materials;
- c) pointing out any successful outcome, no matter how small;
- d) reducing child dependency on the tutor/ the adult-mediator.

**8) *Offering learning guidance***

- a) presenting models to be followed;
- b) supporting child action and reflection by mediation;
- c) modulating the guidance and mediation interventions.

**9) *Providing transition activities***

- a) finding contexts that are closest to the natural contexts in which the acquired knowledge and skills are to be used;
- b) making sure that the transition conditions are clear;
- c) cooperating with parents in order to ensure that what the child has learned is put into practice in everyday life situations;
- d) de-contextualising knowledge.

**10) *Maintaining motivation***

- a) making the activities meaningful;
- b) pointing out all instances of success and progress;
- c) congratulating the child on his/her efforts;
- d) constantly encouraging the child (retroaction, repetition, rewards);
- e) offering the disabled child the opportunity to do what other children of the same age do.

**11) *Ensuring the consolidation of learning by means of repetition and autonomous practice***

- a) gradually decreasing the amount of support and removing help so as to allow for deeper involvement on the part of the child, leading to autonomous activity;
- b) increasing child involvement in activities, various contexts of autonomous practice (increased frequency, varied situations);
- c) consolidating and ensuring the stability of cognitive and social skills management;
- d) providing everyday opportunities of social adjustment and insertion.

*Psychologists* and *special education teachers* mention the following sequences meant to facilitate the formation and development of cognitive structures, sequences that are most obvious especially when mathematical or other “scientific” types of knowledge is acquired:

- various psycho-motor actions that, by involving more analysers, allow for repeated perception;
- differentiation, the acquiring of knowledge via handling different objects;
- diversified representations: completed, restructured and gradually detached from context-specific elements;
- intuitive/inductive reasoning;
- operations spring only if supported by perceptions;
- symbolic acts (schematic drawings of objects, for instance);
- concrete activities of comparison, selection, grouping, based on specified required criteria and assisted by verbal support;
- concrete activities of ordering, serialising, classifying, accompanied by the deduction of defining elements for each notion;
- mental operations as a result of the interiorisation of concrete, objectual operations.

**4. Conclusions**

The opinions expressed by special education teachers and by psychologist are pertinent and appropriate, many of these featuring, in fact, in many research papers in the field, published in western countries with extensive experience in inclusive education (Olson, Platt, 1996; Hemmingsson, Gustavsson, Towsend, 2007).

*Cognitive learning strategies* focus on *how* children learn rather than *what* they learn. In short, the teacher's role is to help children learn *how to learn*. Learning is aided immeasurably by the use of internal mediators. The condition fundamental to the acquisition of basic elements is the organisation of learning experiences that favour children's access to concrete examples by pointing out the ensemble of each concept's essential features.

*Operative structures* are the result of guided development and learning, based on systematic activities and practice, on systematic application and assimilation. A feature characteristic of operative structures is the fact that they can be transferred to and practiced in a wide variety of specific tasks, and thus they influence significantly the level at which the child solves the new learning tasks. The basic incentive in the formation of a child's mental operation rests in the external actions with concrete objects. If, at the beginning, the level of material activity is objectified in external movements, operations and actions, the process is later transferred from external action to external language, to thinking "out loud". Eventually, the action process gets transposed on the mental level, and operations are thus realised as act of thought/thinking.

The *new paradigm of teaching* is based on theory and research that have clear applications to instruction. In the new paradigm of teaching knowledge is actively constructed, discovered, transformed, and extended by students. The teacher's effort is aimed at developing students' competencies. Learning-work involves the cognitive processes of assimilation – intake of information from the environment, accommodation – restructuring to fit new into the old, present structure, and integration – directly fitting information into existing structure. Education is a personal transaction among students and between teacher and students as they work together (Johnson, Johnson and Holubec, 1988). Cooperative learning and collaborative learning are highly effective strategies that could clearly aid in classroom management. Cooperative activities involve the construction of new ideas based on both personal and shared foundations of past experiences and understandings – so they naturally apply some of the principles of constructivism.

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## THE INFLUENCE OF THE VERBAL MATERIAL PARAMETERS IN WORD IDENTIFICATION TASKS IN THE CASE OF THE HEARING IMPAIRED CHILDREN

MARIA ANCA

**ZUSAMMENFASSUNG.** In den Aktivitäten für die Förderung des Sprechens bei den Kindern mit Hörmangel wird die Entwicklung der Analyse- und Synthesefähigkeit der sprachlichen Strukturen auf der Grundlage des Hör-Trainings empfohlen. In der vorliegenden Studie haben wir die Art und Weise verfolgt, in der die Wahrnehmung des verbalen Materials mit Bedeutung der Hör-Funktion entspricht.

**Stichworte:** *sprachliche Strukturen, Hör-Training, semantische Seite, Prothesen, Audiometrie*

**ABSTRACT.** During the activities developed for stimulating hearing impaired children's language, it is recommended to develop analyze and synthesis abilities regarding linguistic structures based on hearing training sessions. In this study it was focused on the way in which the perceptibility of the meaningful verbal material correlates with hearing functioning- it is assessed through verbal audiometric measurements.

**Keywords:** linguistic structures, hearing training sessions, language semantics level, prosthesis, audiometric measurements

### 1. Language semantic level. Terminological clarifications

The central unit of lexemic, semantic language side is word or part of a word that is the support for the minimal significance, it being called lexical morpheme or semantem. The lexeme or the semantem is the basic unity of a word, of a lexical family (often equal with the word root) carrying the meaning, the lexical content.

The fourth central units of language sides: the phoneme, the morpheme, the lexeme and the word can be divided in two categories: mono-plane unities (the phoneme and the lexeme) and bi-plane unities (the morpheme and the word). In the expression plan are characterized the phonemes, unities made of distinctive features. In the content plan, the unities are made of semantic distinctive features. There can be distinguished two major categories of semantic features: lexical and grammatical. For instance, the lexeme "boy" is made of many lexical features; changing the masculine/gender feature, with the one of feminine-gender feature, can be reached another lexeme, this lexeme being "girl". Grammatical meanings are more abstract than the lexical ones, they being more difficult analyzed (Goga, 2001, Gruiță, 1998, Guțu-Romalo, 1967).

Morpheme is made of phonemes, at the expression level, and at the content level lexical morphemes are made of lexemes, for instance the lexeme “lucr-“from the word “lucra-to work”, designates a certain action. Thus, analyzing the above example, it can be observed the fact that a word can present itself as a combination of phonemes, from the expression perspective and as a combination of grammatical and lexical morphemes, from the content perspective.

Being underlined the main feature of linguistic system, that of concentric configuration it is extremely necessary as in the activities developed with the hearing impaired children, but also in those activities projected for mentally disabled children, to be underline the language process, to be developed analyze and synthesis abilities in relation with linguistic structures, abilities for using, applying or generating new linguistic structures based on the old ones.

In what the particularities of the semantic language side is concerned in the case of hearing loss, the following can be mentioned: low vocabulary level, frequent usage of concrete words, the relation syntactic-semantic is a poor one, aspect that leads to difficulties in writing-reading, as well as difficulties of oral communication, the usage of stereotype formulas. The most frequent errors found at this language level influence the comprehension level, both in oral and written communication. Thus, for training and assessing this language level, in the case of the hearing impaired children, but also in the case of those mentally disabled can be enumerated the following methods and procedures: to define new words, the phonetic-analytical-syntactical method, blending words, to fill in the gaps with suitable words, to give synonyms and antonyms, to build new words, to associate the words having into consideration one semantic criterion, the method of the associative-verbal experiment (Slama-Cazacu, 1969).

Gregory and Mogford (1981, apud Webster and Wood, 1989) developed a longitudinal research by analyzing the language samples between hearing impaired children and their parents. They observed that the hearing impaired children also reach the stage of combining two words, when they reached the level of a 50 words vocabulary, in the same way as the hearing children, but the major difference is the one that for the hearing impaired children it takes longer to reach this stage, two of the children that participated in the research acquired 10 words only when they were 5 years old. Thus, it can be underlined the fact that the vocabulary level of the children with hearing impairments is a very low one, even after the auditory-verbal therapy begins. The authors concluded that in the same ways the hearing children, the hearing impaired ones follows, in general, the same developing lines, but with major delays (Mogford și Sadler, 1988). Verza (1977) underlines the fact that, in general, the verbal symbol- the word, is tightly connected in the beginning with the concrete reality, aspect visible in building the words for naming, for offering features and for expressing actions, and dependent on the psychological development, mental operations become more and more independent from the concrete and the words obtain new features. In the case of the hearing impaired

children in order to be acquired and used certain words, is a permanent need to establish connections with the image corresponding to that certain word, as they lack the hearing contribution in building language both from articulating-phonological and self-control perspective, and from the perspective of the acquisition of the word meaning, due to the limited and restricted communication contact (Nicholas, Geers, 2003).

In order to learn to pronounce words, in the case of the hearing impaired children, firstly the word is acquired as a strict symbol for only one object or image, he associates to that certain object one single name. These features are the result of acquiring sign language and its usage by the child in order to establish communication with those around, those that use the same ways of communicating.

Through sign language, a sign denotes only one single object or event or more objects that have the same features or that are part of the same category of objects, this aspect influencing the acquisition and the usage of the words by the child (Anca, 2007, Merrison, 2005). Through gesture, although it is far from the word as social and psychic value, are expressed the mental actions, the gesture enriching the thought in the knowledge process. As an element of language, the sign symbol becomes step by step a factor that insures the accumulation and the expression of an experience related to a certain object, or to an entire category of objects. Here is to be identifiable the so called *operational immobility of thought and language*. The hearing impaired children`s language can be characterized as being reduced as vocabulary and semantics, linguistic structure is reduced as dimension, the expression being elliptical, situation that requires complex and sustained activities for reporting the same word to objects or images in as various as possible situations, in such a way that every word to be as various as possible, regarding its meanings and as operational as possible, within communication process (Verza, 1977).

In the following are presented the results of a research through which it is aimed to underline the way in which the lexical and semantic aspects influence the detection and the identification of the words in the case of the children with hearing impairment, children having conventional hearing prosthesis.

## **2. Tasks for identifying words with meaning**

The participants in the research are pupils with hearing impairments; their detailed description is to be identified in table 1.

### *Objectives:*

1. Assessing the efficiency of the prosthesis for pure tones.
2. Assessing the ability for identification of the hearing verbal stimuli.

### *Hypothesis:*

The following parameters of the verbal material used in hearing training are important: the frequency structure of the verbal stimuli, the length of the verbal structure (syllabic patterns), the complexity of the verbal material.

A first criterion in selecting the verbal material with meaning in order to be used as stimulus within the task was the phonetic equilibration. In order to do this there were used series of ten words phonetically equilibrated from the verbal series proposed by Constantinescu (1964). The second criterion for selecting the verbal material with meaning was the syllabic pattern. In the same way as in the previous task the children were asked to use dactyls in presenting what they hear, the psycho-pedagogue positioned in front of the child having the job to register their answers.

In table no 1 are presented the number of the correct identifications made by those 15 hearing impaired children for mono-, bi- and three-syllabic words.

a. We intend to verify if the usage of the hearing prosthesis determine a significant improving in the case of the identifications regarding the verbal material with meaning. The calculated values of t test indicate that by using the prosthesis it is significantly increased the hearing impaired children possibility to correctly identify the monosyllabic words ( $t=6.136$ ,  $p<.01$ ), bi-syllabic words ( $t=7319$ ,  $p<.01$ ) and three-syllable words ( $t=5260$ ,  $p<.01$ ).

b. In the following lines it was intended to underline the existence of certain influences from the prosthesis on children`s hearing fields but because of the almost linear characteristic of amplification strongly significant correlations were obtained between the identifications made by the subjects in those two experimental settings (with/without hearing prosthesis). The values of the correlation coefficients between those two types of identifications, on different types of verbal material are significant under the circumstances when, for the monosyllabic words,  $\rho=.683$ ,  $p<.01$ , for disyllabic words  $\rho=.540$ ,  $p<.05$ , for three-syllabic words  $\rho=.640$ ,  $p<.05$ . The highly significant correlation identified in the case of the identifications in monosyllabic words (with/without using the hearing prosthesis), despite the correlations that are less significant in the case of bi and three-syllabic words indicate the fact that, in these two last cases, beside the amplification effects due to the prosthesis come in, in a specific way the effects of speech suprasegmental elements (the syllabic pattern). Thus, it is well known the fact that the nature of the used prosthesis influences in a certain measure the ability to perceive the segmental and suprasegmental elements. As all the investigated pupils have retro-auricular conventional prosthesis that aspect couldn`t be emphasized in this research. (Table 1).

c. The existence of a certain correlation between the results obtained on tonal audiometric measurements and this type of verbal acumetry leads to the conclusion that certain verbal structures can be better perceived by the hearing impaired children and that despite the profoundness of the hearing loss, the syllabic patterns and the length of the words have to be focused aspects during the hearing training.

Despite the identifications in the case of the vowel sounds where nothing can be said about the pupils` performances on the basis of tonal audiometric measurements, aerial conduction, in the case of words identifications it can be made a prediction on the success, aspect allowed by the values of the ranks correlation coefficients:

**Table 1.**

**The number of the correct identifications made by those 15 hearing impaired children in the case of mono-, bi- and three-syllabic words**

No.	Grade	Participants	Age	The identification of the monosyllabic words without prosthesis	The identification of the monosyllabic words with prosthesis	The identification of the disyllabic words without prosthesis	The identification of the disyllabic words with prosthesis	The identification of the three-syllabic words without prosthesis	The identification of the three-syllabic words with prosthesis
1	VII A	CR	13	0	5	0	3	0	6
2	IV B	BG	11	8	8	8	8	9	10
3	III A	VZ	10	1	6	1	6	4	10
4	III B	NM	11	0	6	0	8	0	10
5	III A	SM	9	3	9	6	9	10	10
6	IV A	RO	11	0	5	0	7	0	8
7	IV C	GF	11	3	7	4	7	7	9
8	V B	GR	12	0	4	0	7	0	9
9	VII B	GL	14	0	1	0	5	2	3
10	IV C	BC	11	4	7	3	9	3	10
11	V B	VB	12	9	10	9	10	10	10
12	III B	BR	9	0	6	0	8	0	8
13	V B	PC	11	0	6	0	9	0	9
14	III B	TS	10	6	7	4	10	7	10
15	VII B	MR	13	0	10	4	8	7	10

**Table 2.**

**The coefficients of rank correlations between the results obtained in tonal audiometric measurements (aerial conduction) and the results of words identifications in those two experimental settings (with/without the usage of the hearing prosthesis).**

	Monosyllabic words	Disyllabic words	Three-syllabic words
Without prosthesis	.515*	.454	.361
With prosthesis	.583*	.546*	.703**

\*= p<.05

\*\*= p<.01

In the cases of wearing retro-auricular conventional prosthesis can be made predictions regarding children`s ability to perceive a certain verbal material bearing meaning.

**Table 3**

**The coefficients of rank correlations between the results obtained in tonal audiometric measurements (bone conduction) and the results of words identifications in those two experimental settings (with/without the usage of the hearing prosthesis).**

Syllabic Pattern		250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
Monosyllabic words	With prosthesis	.76*	.625*	.677*	.645*	.614
	Without prosthesis	.500	.470	.541	.491	.548
Disyllabic words	With prosthesis	.454	.473	.506	.509	.504
	Without prosthesis	.443	.525	.508	.548	.508
Three-syllabic words	With prosthesis	.346	.421	.496	.498	.430
	Without prosthesis	.281	.280	.445	.462	.508

\*= p<.05

From the analyze of the above data, data included in table number 3, it can be underlined the fact that *the ability to perceive the verbal material with meaning (monosyllabic words), in the case of wearing hearing prosthesis, as well as in the task for identification of the vowel sounds, correlates with the results obtained in tonal audiometric measurements, bone conduction, aspect that supports the recommendation to use, during the hearing training the stimulation method insured by using the casket with vibrator.* It looks that in order to train the perceptibility in the cases of bi-syllabic and three-syllabic words, cases in which it is possible to appear supplementary acoustic elements of suprasegmental nature, are to be developed specific trainings that in purpose aim these elements.

d. the best results (in general) were registered by the participants in the research in tasks of identifications of three-syllabic words wearing hearing prosthesis. Without hearing prosthesis were also better identified the three-syllabic words, aspect that underlines that as long as the phonetic composition is not a differentiating element, the length of the words and the syllabic pattern can be such a differentiating element.

e. We intended to underline the way the syllabic pattern influences the perceptibility of the verbal material bearing meaning.

**Table 4.**

**The identifications of the verbal material with meaning according to the syllabic pattern**

No.		Ideal case	With prosthesis	Without prosthesis
1	Monosyllabic	150	97	34
	<b>Sum</b>	<b>150</b>	<b>97</b>	<b>34</b>
	<b>The percentage of the real identifications</b>		<b>65%</b>	<b>23%</b>
1	Disyllabic	150	114	39
	<b>Sum</b>	<b>150</b>	<b>114</b>	<b>39</b>
	<b>The percentage of the real identifications</b>		<b>76%</b>	<b>26%</b>
1	Three-syllabic	150	132	59
	<b>Sum</b>	<b>150</b>	<b>132</b>	<b>59</b>
	<b>The percentage of the real identifications</b>		<b>88%</b>	<b>39%</b>

The results from table number 4 did not underline significant differences between the syllabic patterns as  $\chi^2 = 0,9$  corresponding to a significance level of  $p > .10$ . It looks that exactly these differentiating elements, that bring indeed supplementary information are not enough valorized by the assessed children, aspect that pleads for developing certain hearing training sessions that are focused on suprasegmental elements.

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## USING A STUDY EXCURSION IN ENGLISH CLASSES TO FAVOUR THE PROCESS OF SOCIAL INTEGRATION

ANTRA ROSKOSA\*

**ABSTRACT.** The society of Latvia has always been multicultural. People of different nationalities have lived and are still living there. However, the fact that a society is multicultural does not mean that there are not intercultural communication problems there. It means that a multicultural society nowadays could deal with conflicts and tension. Fortunately, in Latvia the relations among people of different nationalities are not ill - inclined and aggression is a rare thing there but it is also necessary to admit that society is divided into two communities – Latvians and Russian speaking people who belong not only to Russian nationality but also other nationalities - Ukrainians, Byelorussians, Polish etc. Such division of the society is also characteristic for schools, universities.

Working as an English teacher at Riga Technical University the author has observed that English could be used as a means to unite Latvian and Russian speaking students. And one of the most effective teaching/ learning methods to favour the integration process of Russian speaking students could be a study excursion. Thus, the author of the article will try to explore a study excursion as a means improving communication and social integration in a group.

**Keywords:** perception, attitude, motivation, values, interest, ability, education, family

**ZUSAMMENFASSUNG.** Die Gesellschaft in Lettland ist immer multikulturell gewesen. Die Menschen verschiedener Nationalitaeten haben schon immer dort gelebt. Aber die Tatsache, dass die Gesellschaft multikulturell ist, bedeutet nicht, nicht, dass es keine interkulturellen Kommunikationsproblemen gibt. Auch in einer multikulturellen Gesellschaft koennen die Konflikte und die Spannungen sich bewahren.

Zum Glueck, sind in Lettland die Beziehungen zwischen den Menschen verschiedener Nationalitaeten nicht feindlich, und eine aggressive Handlung ist hier nicht charakteristisch. Trotzdem muss man auch erkennen, dass die Gesellschaft in zwei Gemeinschaften aufgeteilt ist – die Letten und die russischsprechenden Menschen, die nicht nur Russen, sondern auch die Vertraeter anderen Nationalitaeten sind – Ukrainer, Belorussen, Polen u. a. Die Teilung ist auch auf den Schulen und den Universitaeten sichtbar.

Waehrend der Arbeit als Englischlehrerin in der Rigaer Technischer Universitaet, hat die Autorin des Artikels gemerkt, dass Englisch als Mittel fuer die Vereinigung

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der Studenten, die Lettisch und Russisch sprechen, genutzt werden koennte. Eine der effektivsten Lern-/ Lehrmethoden, die die Intergration von russischsprechenden Studenten foerdern wuerde, eine Lehrexkursion waere. Aus diesem Grund versucht die Autorin eine Lehrexkursion als ein Mittel fuer Fordern der kommunikativen und sozialen Integration in Studentengruppen zu charakterisieren.

### **Introduction.**

The present practice working at the university as a lecturer sometimes shows that there exist communication problems among students. Latvian nationality students tend to cooperate more with Latvians but Russian speaking students are also more willing to communicate with those students who belong to their nationality. Such separation of students makes a learning/teaching process difficult. To solve the problem the author of the article uses different teaching/learning methods, forms, means in English classes which improve students' communication. One of these teaching/learning methods is a study excursion.

To prove that a study excursion could be used as an effective method improving communication in groups and also promoting an integration process of Russian speaking students experimental study excursions were organized. The participants of study excursions were students from Riga Technical University, Faculty of Architecture and Urban Planning and Faculty of Building. The total number of students participating in the experiment at different stages of the study excursion was 147.

The study excursion included three stages:

- a) a preparatory stage of the study excursion,
- b) a while – excursion stage of the study excursion,
- c) a post – excursion stage of the study excursion.

At a while-excursion stage of the study excursion – a walking tour in Old Riga was organized. As the number of students participating in the experiment was high there were organized four walking tours in Old Riga and the experimental study excursions took place all May long, 2008.

Using the study excursion as a means of communication and also a teaching/learning method in English classes included:

- 1) working in mixed groups consisting of Latvians and students belonging to other nationalities,
- 2) preparation of a group's presentation about different historical, architectural and cultural objects in Old City of Riga,
- 3) participation in a walking tour and giving a presentation about different historical, architectural and cultural objects in Old City of Riga,
- 4) participation of students in the discussion to sum up and analyze the process and results of the study excursion.

Improving the communication in the group and creating a friendly atmosphere there was the main aim of the study excursion but the participation of students in the activity also improved their knowledge and increased interest about history and culture of Latvia, Latvians and other nationalities living there, Riga as a capital city, thus, developing their belonging to Latvia, feeling of patriotism and in a such way integrating Russian speaking students in the society of Latvia.

In addition, students increased their knowledge about other learning subjects taught at the university as well, for example, History of Architecture, History of Art, thus, the learning/teaching process became integrated.

Apart from it, it is also necessary to admit that a study excursion was an effective way to improve students' languages skills and at the preparatory stage of a presentation to find the information three languages – English, Latvian and Russian were used, thus, helping students to be aware of advantages using and knowing different languages.

A very important aim of the study excursion was also improving students' skills of giving a presentation and making a performance in English, developing students' listening skills and ability to concentrate which are also important in the process of communication.

The characteristics of the study excursion and the activities realized at different stages of it will be described and analyzed in the following paragraphs.

### **1. The characteristics of a study excursion.**

A study excursion is one of the ways of enriching the process of studying as it helps students to develop their knowledge, skills and abilities acquired during classes. A study excursion offers an opportunity to strengthen students' theoretical knowledge and could inspire them to use language freely as in a natural linguistic environment.

One of the advantages of a study excursion is breaking a monotony of an academic lesson and daily routine causing the change of situation and place. Being away from the customary rhythm of the university students get rid of stress and are willing to assume new information.

However, as a researcher Anda Asafreja has observed the disadvantages of a study excursion also have to be mentioned:

- 1) planning and organizing of a study excursion takes a lot of time,
- 2) in case a study excursion is not controlled, it may turn into the waste of time,
- 3) not all students get an equal experience. (Anda Asafreja: 2001)

According to Anda Asafreja teachers should take into consideration the following rules to organize a study excursion properly:

- 1) a study excursion must be planned carefully and worked out in details,
- 2) participants of an excursion have to take an active part in activities avoiding being passive observers and listeners. Students have to learn through activities.

- 3) suitable methods have to be chosen for demonstrating the objects of a study excursion,
- 4) teachers should avoid unnecessary explanations because students might get tired much easier on an excursion than in ordinary classes as it is a change of environment. (Anda Asafreja: 2001)

Lois B. Hart suggests that a study excursion is more effective when it is organized to introduce the theme or finish it. In the first case students are given the clues showing the importance of the theme. If a study excursion is organized at the end of a learning process it helps to strengthen acquired knowledge and use it practically. (Lois B. Hart: 1999)

There are several factors influencing an excursionist in the process of an excursion which will be characterized in the next paragraph.

## **2. Factors influencing an excursionist**

The research by Anda Asafreja shows that each person who intends on going on excursion is influenced by internal and external factors. Firstly, a potential excursionist is influenced by the following internal factors:

- 1) perceptivity,
- 2) attitude,
- 3) motivation,
- 4) values,
- 5) interests,
- 6) abilities,
- 7) skills,
- 8) education,
- 9) personality.

Conversely, the internal factors are influenced by external factors:

- 1) family,
- 2) environment,
- 3) school (university),
- 4) society,
- 5) social membership. (Anda Asafreja: 2001)

As V. Zelmenis stresses perception of a person depends both on physiological and socially psychological conditions. Persons whose physiological descriptions are according to a standard but who have been brought up and live in a different social environment may distinctively react to the occurrence of the outside world. (V. Zelmenis: 2000) Also it is necessary to emphasize that students remember their previous experience by perception. They build up some associations, observe, compare and analyze.

Thus, it is important for teachers to take into consideration how students might perceive the information acquired during an excursion, how relations among

students of different nationalities might develop into during the process of an excursion and which could be the most appropriate route and objects of the excursion to give positive impressions for excursionists.

With reference to V. Zelmenis attitude is an intellectual, emotional and physical reaction of a person to events, things and other people. This reaction is developed in the course of time. The choice, feeling and behaviour of a person is formed by attitude. The higher level of intellect a person has, the attitude of him/her to an environment and other people is more tolerant, behaviour of him/her becomes more reasonable and he/she tends to control his/her emotions. (V. Zelmenis:2000) To satisfy the interests of excursionists, to make an excursion exciting and inspiring, teachers have to take into consideration the needs and motivation of students, their aims. As more interested students will be as more new information and fresh ideas they will get and relations and communication among them will be also more active and vital.

Thus, the action of a person depends on his/her motivation. The point of view of P. L. Pearce is that there are several levels of motivation which may form a career of an excursionist. (P. L. Pearce: 1996) The satisfaction of biological needs of excursionist when the main aim of excursion is relaxation is the lowest level of motivation.

After meeting these needs the next important step of an excursionist is being in safety. Travelling and going on excursion without any risk is one of the most important conditions of an excursionist. Safety favours travelling and going on excursion.

The following motive of a person going on excursion is a desire for starting new relationships and being in communication with other people. Excursion is an environment where a person can satisfy his/her needs for sociability. Thus, an excursion could be a means of making new friends, getting to know other people better, creating a friendly atmosphere in the group in such way also favouring the process of integration and communication among people belonging to different nationalities.

The next level of a career of an excursionist is meeting the needs of self – development and special interests. Thus, it is important to organize and guide an excursion qualitatively and interesting inspiring people to continue their education lifelong. Besides, an excursion could be a way how to introduce people with the information on culture of other nationalities and help to understand better advantages of working or studying or having a rest with people which belong to other nationality, thus, to get acquainted with their culture in a much higher level.

The highest step of a career of an excursionist is a possibility of self – realisation as on excursion the participants are offered an environment or a context in which they can test their spirit of creativity and self – expression. Besides, a self realisation is a very important condition to have a high self –esteem. And it is necessary to admit that people who have self – confidence are more tolerant and friendly to people of other nationalities, more willing to communicate with them.

P. L. Pearce points out that it is possible for an excursionist to carry out several levels of motivation simultaneously. The gradual transition is not the only way of reaching a top of a career. (P. L. Pearce: 1996)

The definite orientations establish the life of a person. The thing he/she strives for and prefers to in a definite situation is a value for him. During the course of time the feelings of a person and general orientation of values change as an individual and the world we live in are changeable, too. As Anda Asafreja stresses eight values of people enjoying going on an excursion have been explored:

- 1) self – esteem,
- 2) safety,
- 3) friendly relations,
- 4) necessity for success,
- 5) self – realization,
- 6) necessity for respect,
- 7) entertainment. (Anda Asafreja:2001)

According to V. Zelmenis the social maturity of a person depends on values he/she is orientated on – what his/her aims in life are, what co – operation means to him/her, how a person estimates his/her activities. Each person may have his/her own individual system of values where they are arranged in a definite hierarchic order. A classifying of values as process may come about only in case if a person is able to select among all those values which meet his/her needs and interests. The next step after selecting is arranging them in a definite structure according to future aims and possibilities to realize. (V. Zelmenis: 2000)

The author of the article is of the opinion that people's belonging to a definite culture, traditions, religion also forms their system of values. To promote the process of social integration of people belonging to different nationalities it is necessary to realize the policy stating that every culture, every nationality is important and respected, that the country people live, study and work in needs them and wants them to belong to. A feeling of appreciation, patriotism, taking pride in their country may unite people and favour the communication among them.

V. Zelmenis explains interest as an active attitude to objects, actions and phenomena determined by needs, experience and choice. (V. Zelmenis: 2000) According to Anda Asafreja a deep interest in unknown countries, different objects of nature, history and art grows into a necessity to travel. An interest may also arise spontaneously as a result of emotional attraction of an object. In such case a consciousness of significance of the object comes later. (Anda Asafreja: 2001) The author of the article has noticed that many of Russian speaking students who have spent all their life living and studying in the capital city of Latvia – Riga do not know a lot about other towns of Latvia, its countryside, important cultural and historical places. Thus, an excursion may be a means how to arise students' interest about their country. And the new information, unseen objects, sights might develop their feeling of belonging to the country they live and study.

Researchers R. Garleja and M. Vidnere have a point of view that the kinds of abilities depend on knowledge, skills and a will of a concrete person. There are several kinds of abilities necessary for an excursionist:

- 1) ability for activating an interest,
- 2) ability for observing and estimating,
- 3) ability for being objective,
- 4) ability for selecting the object to concentrate on,
- 5) ability for concentrating attention on other persons,
- 6) ability for being self – confident and self – determined. (R. Garleja, M. Vidnere: 2000)

The author of the article considers excursion as a way of developing students' learning abilities as they learn to observe, compare and draw consequences and also a means of helping students to be more open in their communication in such way developing their ability to make contacts with their group mates as an atmosphere on excursions is relaxed and without pressure. Thus, in such environment, in informal conditions students might become friendlier, more united and get to know each other better.

V. Zelmenis points out that people's skills are formed in the course of exercises and gradually turn into knacks. (V. Zelmenis: 2000) Having obtained theoretical knowledge, for example, information on historical and architectural monuments in Riga, students are able to use it practically, when giving a presentation during an excursion. They may improve their skills watching their colleagues' presentations and learning from their mistakes. Thus, working practically students gain experience and develop their skills of giving a presentation.

With reference to Anda Asafreja education is a purposely organized sphere of:

- 1) historical experience of society,
- 2) mastering and inheriting of cultural values,
- 3) mastering systematized knowledge and skills,
- 4) forming personal qualities, assurance, attitude and values. (A. Asafreja: 2001)

The author of the article is of the opinion that education is a means and basis for further developments of knowledge, skills, culture and personality. Educated people have higher demands not only for themselves but for others as well. When going on excursion and choosing a route of an excursion such people pay a special attention to possibility acquire new information. Entertainment is in the second place. However, working out a route of an excursion for students who are the most energetic and active part of the society it is necessary to include there both more serious objects of sightseeing, for example, cathedrals, castles and entertaining objects as well not to make an excursion tiring.

As V. Zelmenis considers learning develops intellectual needs of students and forms their personality – will, feelings, behaviour. The structure of personality is formed by needs, interests, knowledge and skills, abilities, temperament and character of a person. It is characteristic for a personality to have an active perception of life according to its moral and ethical code. (V. Zelmenis: 2000) When preparing a

presentation and playing a role of a guide it is essential for students to be aware that a guide of an excursion has to be a bright personality, a good psychologist and a competent specialist to make an excursion interesting, educational, fluent and able to solve problematic situations. A professional guide could be a model, an example of behaviour for students. Seeing a professional work of the guide students might also get influenced to do their duties qualitatively and be useful for their country and society.

Family is one of the external factors having an influence on internal factors of an excursionist. As Anda Asafreja explains a family is considered to be a historically changeable small social group the members of which are connected by matrimony or consanguinity, they have common property, they help and are morally responsible for each other. (A. Asafreja: 2001) A student requires support – material and moral of his/her family to be able to study successfully and participate in out of university activities as well. The more educated are parents, the more attention they will pay to education of their children. Going on excursion might also be one of the ways to get educated, to perfect oneself. If parents consider going on excursions as a means of broadening their children's outlook their children will also appreciate the importance of it. Thus, there is no doubt that a family is a determinant creator of a cultural and educational environment of a child. The author of the article believes that a level of student's intelligence, culture is formed by education, up – bringing, self – education and behaviour. If a student is intelligent, he will be more tolerant to other cultures, open to intercultural communication. Family and educational establishments have to be cornerstones which highly influence child's opinion on advantages of cultural diversity, importance of united and tolerant society, inclusion and appreciation of every member of society.

According to R. Garleja and M. Vidnere environment could be described as physical and intellectual (material and immaterial, touchable and untouchable), also social and material surrounding, totality of circumstances, objects and/or individuals and their interrelation which encloses the objects of animate and inanimate nature, secures existence and link among objects (individuals), influences their existence and development. (R. Garleja, M. Vidnere: 2000) It is important for a person to feel himself/herself as a part of environment in order to be influenced by it positively. Favourable surrounding is of a great importance in forming of internal and external world of a person.

A study excursion when a customary rhythm of learning is changed and environment is different might also help students to see things from the other point of view, in other aspects. Not only new information, knowledge, ideas could be get in the process of excursion but in an informal atmosphere students may change their opinion on their group mates seeing them in a favourable light and making new friends. Also at the preparatory stage of a study excursion when students work in mixed groups preparing the presentation they help each other, share ideas and experience improving communication in the group. Thus, the process of social integration is promoted.

School (university) is also one of the external factors having an influence on a study excursion. The attitude of teachers and administration of the university to different learning/teaching methods also influences students' opinion. If teachers support using different teaching/learning means and forms in classes the students will also respect these methods and actively participate in the learning process. If teachers' and administration reaction to alternative forms of teaching/learning is sceptical and negative students might also take them unimportant and not serious. Thus, it is necessary to inform and educate teachers on different ways of teaching/learning, about their advantages and disadvantages encouraging teachers to use also other forms of teaching/learning in such way lessening their conservatism and inflexibility.

Society and social membership are also external factors influencing the process of a study excursion. To use a study excursion as a means of educating, informing and not only entertaining people it is also necessary to take into account the attitude of the society to it. If the society is educated, intelligent and is aware of importance to continue the education its attitude to a study excursion as a way how to favour society's educational process will be supporting. If the society does not pay much attention to its cultural level and is unpretentious to develop it, the attitude of such society to a study excursion will also be indifferent. Thus, the social membership is very important to develop your education.

A study excursion as a means of social integration will be characterized in the next paragraph.

### **3. A study excursion as a means of social integration.**

The main aim of a study excursion as a means of social integration was to improve communication in the group and create a friendly atmosphere in it. Besides, during the process of an excursion students had a possibility to get to know each other better and also see their colleagues from the other point of view breaking wrong opinions and stereotypes on each other.

A very important aim of the study excursion was also to rouse students' interest about the culture, traditions of people living in Latvia, history and architecture of Riga in such way promoting students' feeling of patriotism and belonging to their native country and city.

The new information on cultural, historical and architectural objects also developed students' knowledge of other learning subjects, for example, History of Architecture, History of Art, thus, making the learning process integrated and helping students' to achieve better results in their studies.

The other aims of a study excursion as a pedagogical activity was to inspire students to use English purposefully, spontaneously and creatively developing their speaking and listening skills and ability to concentrate which is also an important quality in the process of communication.

The improvement of students' skills of working in groups using visual materials – tourists' guide books and Riga City Map and analyzing and selecting the necessary information was also a significant goal.

Apart from these aims, it is necessary to mention that there were other objectives to be reached as well, for example, a study excursion helped students to improve their skills to give a presentation and make a performance interesting for other students. As students had to estimate other colleagues' presentations their skills of making a comparison and drawing the conclusions were increased as well.

The process of a study excursion included three stages:

- 1) the pre – excursion stage,
- 2) the while – excursion stage,
- 3) the post – excursion stage.

At the pre – excursion stage of a study excursion the students had to deal with activities preparing them for an excursion. The main objective of activities was to improve students' communication and relations between Latvian and Russian speaking students. To reach the goal students had to work in mixed groups including students of different nationalities.

One of the tasks of the students at the preparatory stage of an excursion was working out the route of it. The place of an excursion was determined and it was the old town of Riga. Thus, all the sightseeing objects chosen by students had to be located in Old Riga. The length of time of an excursion was limited – approximately 2 hours and the length of each presentation was also determined about 10 minutes not to get the other students bored and keep the process of an excursion intensive. Students had to work with tourist guide books and the Riga City Map and select the information on the most popular tourist attractions choosing the ones most interesting for them.

After working in mixed groups and having made different variants of the route the next task for students at the pre – excursion stage was to make up the most appropriate version of it. Thus, the students and their teacher – the author of the article had a discussion analyzing the variants worked out by the students. Finally, the following excursion programme or route was chosen. The most popular sightseeing objects were:

- 1) St. John's Yard and St. John's Church,
- 2) St. Peter's Church,
- 3) The City Council Square and the Town Hall,
- 4) The House of Blackheads,
- 5) The Dome Square and the Dome Cathedral,
- 6) The Complex of Buildings "The Three Brothers",
- 7) St. Jacob's Church,
- 8) The Swedish Gates,
- 9) The Monument to Freedom.

The next activity at the pre – excursion stage of an excursion was marking the sightseeing objects chosen by students on the Riga City Map to see their location visually.

After deciding on the route of an excursion students had to choose the sightseeing objects and places they were going to introduce with their group mates and the teacher. Students continued working in mixed groups and each group had to work out the scenario of their presentation and to prepare the information on sightseeing object. The students had to prepare the home task – find the materials – tourist guide books, maps, newspapers, magazines, Internet resources, bring them to their English class and continue working in mixed groups selecting the most important and interesting information and making up a presentation.

Besides, as it was very important to involve all students in a process of an excursion and arouse their interest in this project the students were asked to make their presentations interactive – including activities and various tasks.

At the while – excursion stage of a study excursion the students had to give their interactive presentations and make performance. The study excursion started in the St. John’s Yard. Students responsible for this part of an excursion performed well, however, it is necessary to admit that one of the presentations about this object seemed a bit timid and shy. It was necessary for the teacher to encourage students and increase their self – confidence. Nonetheless, giving a presentation was an effective way for students to gain experience and learn from mistakes. Other students learned from their group mates having a possibility to make a comparison of different presentations and catching interesting ideas to make their own performances.

Estimating students’ performances it is worth remembering the group which to make the presentation interactive asked their group mates the questions about souvenir shops situated nearby. The group of students was divided into three smaller groups and each group had to answer and discuss the following questions:

- 1) the first group – “What kind of souvenirs from Latvia are the most popular among foreigners?”,
- 2) the second group – “Which nationality do people most often visiting souvenir shops belong to?”
- 3) the third group – “Which are the most popular souvenirs bought by the native inhabitants for their foreign friends?”

After discussion students answered the questions:

- 1) the first group: “The souvenirs having a great demand from the foreign visitors are linen goods and amber jewellery,
- 2) the second group: ”The nationalities tourists most often visiting the souvenir shops belong to are the Germans and Scandinavians,
- 3) the third group: “The most popular souvenirs bought by native inhabitants for their foreign friends are “Laima” chocolate, Riga Black Balsam and wooden toys.

Students participated in the discussion quite actively (of course, some were very active, some seemed more reserved) and did not look bored because the environment of learning was different and ways of getting information were distinctive. The atmosphere in the group also seemed friendly and cooperative. Students also told that this activity helped them to think about the things which represent their native land and be aware of themselves as representatives of the country they belong to. It was very important to make students interested in the process and activities and cooperate with each other at the very beginning of excursion to realize all the goals set.

The next object of the excursion was St. John's Church. On the whole groups of students were well – prepared and presentations went smoothly. One of the activities prepared by students the author of the article considers interesting and worth describing. As near St. John's Church there is a small square where the excursionists can see a present from the city of Bremen – a sculpture of the famous "Bremen Town Musicians" the task of the students was associating with that sculpture. The students told that the city of Bremen also had a similar sculpture and there was a belief that people had to put their hands on the sculpture and keep them for a while imagining the wish. And this wish some day would come true. Students asked their group mates to imagine a wish they would like to come true and try to make sure if this belief is feasible. The activity created a lot of fun, not taking into account that many students were sure that this belief was unlikely to be reliable.

Then the excursion continued with the impressive St. Peter's Church. The presentations of students were fairly good, however, the organization and planning of some of them could be more thought over. Sometimes they seemed rather chaotic. As an interactive activity it is worth mentioning the task prepared by students from the Faculty of Architecture and Urban Planning to compare two sacral buildings – St. John's Church and St. Peter's Church. The location of excursionists was very favourable for doing the task as they stood seeing both buildings. A group of students who worked out this activity stated that the main aims of doing it were developing students' ability to compare two different buildings having visual information and enriching vocabulary of students with the terminology of architecture. The task turned out to be rather complicated as the students had difficulties in expressing themselves because of a poor vocabulary. However, with a help of their group mates – students who thought out this task and also with a help of the teacher they managed to translate the unknown expressions. Thus, the activity increased students' knowledge of the terms of architecture and strengthened it with the visual information.

It is also necessary to mention one more interactive activity worked out by the other group of students. They asked their group mates if they go to exhibitions. Students answered positively and then the next question followed: "How many art galleries located in Old Riga do they know?" Students of the Faculty of Architecture and Urban Planning answered more actively, however, there were also

students from the Faculty of Building who were quite knowledgeable. Several art galleries situated in Old Riga were mentioned, for example, “Bonhans. s”, which is located near the St. Peter’s Church, “Māksla XO”, “Pedants”, “Marta’s Krasta’s gallery” etc. This information was very useful for Russian speaking students because they are more willing to visit cultural activities organized in Russian language and by Russian people. Thus, the information they get is one – sided. And Latvians also are tended to attend cultural activities characteristic for Latvian culture, in Latvian language. It means the society is also divided in cultural space. And the losers are both Latvians and Russian speaking people. The author of the article in the process of excursion tried to explain that visiting cultural activities organized by people of other nationality, for example, art galleries, is a way how to enrich students’ own personalities, their own culture, that a cultural diversity is enrichment and advantage. Culture is a means of social integration. And that it would be very useful to organize more cultural events giving information on people of different nationalities living in Latvia. At present, it seems that most of cultural activities are devoted to Latvian culture. And people who belong to other cultures may consider it unequal.

The next part of the excursion was visiting the City Council Square with the Town Hall and the House of Blackheads. Estimating students’ performances the author of the article has to admit that some presentations could have been more informative and interesting. Some groups of students seemed not so well prepared. Students of the university should have been more responsible. For all that, there also was a presentation of a group worth analyzing. The students divided the group into two parts and asked each group to discuss and answer the following questions:

The first group: “Should modern buildings be constructed in Old Riga?”

The second group: “What buildings should be restored in Old Riga?”

The discussion proved that The City Council Square with The Town Hall and The House of Blackheads from the point of view of future builders and architects are one of the most contradictory objects in Old Riga. An active involvement of students into the discussion showed that students are interested in their studies, they are not indifferent to historical and cultural values of the city they live and study in. Working in mixed groups at the preparatory stage of the excursion also turned out effective because students belonging to the definite group had a tendency to keep to the same group also in the process of excursion. Thus, Russian speaking students were also involved in the discussion and felt as a part of a group proving that teachers have to use cooperative methods in classes as an effective means of uniting split groups of students.

The other object of the excursion was the Dome Square and the Dome Cathedral. Remembering students’ presentations the author of the article suggests that is very necessary when preparing students for an excursion remind them the basic principles how to organize, plan and guide an excursion. Manners of behaviour when going on excursion also have to be taken into consideration. For example, one of the groups of students when giving a presentation on the Dome

Square did not organize the group mates to make them listen to, spoke quietly not paying attention to the mood of the group mates and not noticing that students started to get bored, spread away and did not listen to speakers attentively. Thus, the excursion was a good lesson how to manage the group of people, how to creatively react on different situations, how to be a good orator. All these skills might be also necessary in students' future work and need to be developed.

To conclude, problems may appear because sometimes it is hard to foresee what the students' reaction about their group mates presentations might be, if students participate in activities actively, if the process of excursion may become chaotic, if excursion fails etc. Thus, the teacher's role in the process of excursion is very important. The teacher has to be a leader of the group and manage it adapting to different situations. The teacher also has to help students if they need encouragement and support as not every student is a good orator and has a performer talent. Thus, in the process of excursion a teacher learns from her/his students and students learn from their teacher. Teaching/learning process is reciprocal.

The Dome Square is considered to be the centre or the heart of Old Riga. And the activity prepared by one of the groups of students was to make other students think of other towns of Latvia and decide which could be the most popular places in these towns called "the heart of town". As the groups of students were formed by people from different places of Latvia the students were interested in activity and willing to represent their native towns. It seemed that the most of students were proud of the places they were born and lived the most of their life. To conclude, it is necessary to admit that this activity aroused among students some feeling of patriotism, belonging to their country, love for it. It was especially important for Russian speaking students because many of them live, study, have friends and relatives in the capital city of Latvia – Riga and do not have much interest about other towns of Latvia. But Latvia does not consist only of Riga. Possibly, this activity could encourage Russian speaking students to travel more around Latvia and be more patriotic.

The next object students had to visit was a complex of buildings "The three brothers". The author of the article highly appreciates the work done by students to prepare the presentations about this object. The information given was rich and many – sided and students' performances were interesting and with humour. The stories about the object created joy and the atmosphere in groups was free and active.

As the most successful interactive activity about this object could be mentioned the task prepared by students from the Faculty from Architecture and Urban Planning. As one of the buildings of the complex "The three brothers" is the oldest stone dwelling house in Riga (it is situated at M. Pils street17) the task for other students was to compare this medieval dwelling house with the dwelling houses people are building nowadays. Such activity developed students' skills of creativeness and imagination, enriched their vocabulary as it dealt with the terminology of architecture and also improved students' ability to compare visual

information. The activity aroused a lot of excitement and students were willing to do it. The communication in the group was friendly and open.

The next object students paid their attention to was St. Jacob's Church. After giving a presentation about the main Catholic Church in Riga one of the groups of students involved their colleagues in the activity also dealing with religious theme. Students had to share their knowledge about churches of Riga belonging to different confessions: Lutheran, Catholic and Russian Orthodox Church. They had to tell about the location of churches and ways of getting there, also the information about buildings' architecture and interior had to be included. Thus, students enriched their vocabulary dealing with the architecture of sacral buildings and paid their attention to such important theme as religious life in Latvia. As religion is an important part of culture of different nationalities and rather often a cause of misunderstanding and hostility it is useful to speak with students about the positive meaning of religion as a way of teaching people to live in peace and harmony, be tolerant and respect each other culture and values. The activity was interesting for both Latvians and Russian speaking students as among them there are many students who do not care about religion at all but through architecture which is the theme students are curious to have information, catch ideas, solutions students might estimate the sacral buildings and religion as a significant part of cultural heritage.

The other object students were going to visit was Swedish Gate. The author of the article would like to mention the presentation prepared by students who tried to connect it with the history of Riga and students had to name all the governors which ruled over Latvia - Germans, Polish, Swedes and Russians. Involved in the activity students tried to remember the periods in history when Latvia was under the influence of other countries and how it affected the life of native people, their culture. The interactive activity helped students to be aware of the fact that Latvia has always been a multicultural country and people living there had to learn for centuries to be tolerant to each other and live in peace. And that nowadays when the society of Latvia is divided and people's opinions about the history of Latvia are diverse it is useful to educate young generation, students about a necessity to have a belief that all the people living, studying and working there are needed for their country, that every culture has its own contribution to the society and that people of all nations living there are equal.

The last sightseeing object of a study excursion was the Monument to Freedom. In one of the activities prepared by students excursionists were divided in five groups and each group was given a task to characterize Latvia in some words. Different characteristic features typical for Latvia were given: a seaside, A Song and Dance Festival, forests, amber, storks, lakes and rivers, cemetery culture, Ligo festivity, ice – hockey fans, Monument to Freedom, hard – working people, rye bread etc. The activity might have helped both Latvian and Russian speaking students to be proud of living in Latvia appreciating their native country. The author is of point of view that developing the feeling of patriotism in the society is one of the means how to

promote people's, and especially Russian speaking people belonging to Latvia, their self – esteem and motivation to be useful for Latvia's development.

At the post – excursion stage of the study excursion in their English classes students were asked to participate in the discussion and analyze the process of the excursion. Students were asked to discuss the following questions:

- 1) to estimate the process of preparing the presentation working with visual materials, tourist guide books, Riga City Map,
- 2) to estimate the process of giving presentations,
- 3) to estimate the knowledge and information acquired during the process of excursion,
- 4) to estimate the study excursion as a means of learning English,
- 5) to estimate the study excursion as a way of improving communication, cooperation, making friendlier atmosphere in the group,
- 5) to estimate the study excursion as a tool to favour the integration process of Russian speaking students.

In the discussion most of students the process of the preparing the presentation and working with visual materials – tourist guide books and Riga City Map found unusual and interesting but the process of giving the presentation was estimated as not very easy but about the right level of difficulty. Majority of students considered that they had acquired a lot of new information during the process of the study excursion. The study excursion as a means of learning English was rated high by students as an excellent way to change the ordinary learning environment into different conditions. In the process of excursion students also admitted that working in mixed groups consisting of people of different nationalities they got to know each other better, saw their group mates from the other standpoint, that working in a team with the same aim made them feel united and responsible for their work. Majority of students also thought that the study excursion had aroused quite a lot of feeling of patriotism, being proud of Riga, its architecture, history or as one of the students said the story of Riga.

Besides, students discussed the newly acquired experience of being a guide and representing their own city. Majority of them thought highly of having an opportunity to get such an experience and knowledge which they might apply in practice when going on sightseeing with foreign guests.

### **Conclusion**

The main aim of the study excursion was to explore it as a means of social integration, a way how to promote integration of Russian speaking students into groups mainly consisting of Latvians.

To reach the aim students were asked to work in groups consisting of people belonging to different nationalities. The members of the groups had the common aim – preparing and giving the presentation about sights of Old Riga. In

such way the author of the article tried to improve communication in the group, helped students to get to know each other better, made a friendly atmosphere there uniting students.

In the process of the study excursion students also acquired new information about the city they live and study in arousing students' feeling of patriotism, belonging to their native land, being proud of it. It was especially useful for Russian speaking students as they rather often lack being a part of Latvia and sometimes consider themselves appertaining to Russia.

Apart from it the author also tried to explore the external and internal factors influencing an excursionist and having an effect on the process of excursion.

It is also necessary to admit that students in the process of discussion evaluated highly using a study excursion as a means of social integration confirming that the whole process (preparatory stage and the while – excursion stage) promoted communication in the group and students had a chance to see their group mates from the other standpoint and were able to change their opinion. Students also emphasized a positive meaning of changing the usual learning/teaching environment, an opportunity to learn and be taught differently. Most students expressed their wish of going on a study excursion more than once a year.

Thus, evaluating the results of a study excursion and drawing the conclusion the author considers using a study excursion and English language as a way how to promote the process of social integration in students' groups bringing them together.

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## **TUTORING AND DEAFNESS: A TUTOR'S EDUCATIONAL CONTRIBUTION ACCORDING TO HIS DEGREE OF DEAFNESS**

**ELISABETH DAMBIEL\***

*Translated into English by Josée Gevrey*

**ABSTRACT.** This article emphasizes on the tutoring effects program in developing communicative abilities for hearing impaired children. The research is based on dyads between deaf children and three categories of tutors: hearing ones, deaf ones and semi-deaf ones. The impact of the experimental program is quantified in terms of progress concerning the communicative area abilities, materialized in different types of exercises. After developing the experimental program it is underlined the fact that the group of children with hearing tutors registers the most significant progress, while the group of children with deaf tutors registers the lowest progress.

**Keywords:** tutoring education, tutors, tutee, hearing impairment, dyads, communication abilities

### **Tutoring practices with deaf children**

According to worldwide organization of health there are about 278 million deaf or hard-of-hearing people in the world and four millions en France, that is about seven per cent of the French population. This handicap can have serious consequences for communication and language for deaf newborn. Thus a linguistic handicap coexists with a communication handicap, deaf children being excluded from linguistic immersion and as well as from spontaneous access to language. Deafness as a sensory handicap necessitates a face-to-face meetings which make possible lip-reading as well as use of facial expressions.

Presence of deaf children in a school system not only favours some tutorial situations between deaf children, but also between hearing and deaf. The various actions in aid of school integration for deaf children propose all kinds of possible interactions around an exercise: some interactions between deaf children or with hearing children. With this sensory handicap, the face to face makes easier legibility of transmitted messages. Thus, the study of tutoring could throw a light on the conditions and the results of work in pair.

So, which factors could be facilitating to stimulate the deaf tutees for progress?

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### **The handicap**

Deaf people are more or less cut off from environmental sounds and exchanges of information. Communication with such people isn't quite spontaneous; we must speak slowly, articulate clearly, repeat if necessary and face them directly while speaking. Deafness disrupts modes of exchanges between a deaf person and his environment. Some means of communication are also at his disposal, such as Cued Speech or Sign Language. Cued Speech consists of hand shapes near the mouth that represent spoken language. Vowel phonemes are expressed by a particular position of the hand and consonant phonemes by placement of the hand near the face. This way syllables are formed to complete lip-reading and distinguishing sounds that look the same on the lips. A signed speech uses gestures of Sign Language, but associated with spoken language; they appear in the order of syntax. Sign Language is a real language that includes no writing. Some symbolic gestures are linked with referents. Notions about time and space are handled in a different way.

It is difficult for deaf to take in contents of information and knowledge generally speaking. Command of language is rather hard for deaf people; some numbers are in support of this observation. In France, the Gillot report (1988) states that 80 per cent of the profoundly deaf are illiterate and only 5 per cent are admitted to University. Outside of educational choice about language we have chosen to concentrate on deaf child's development in a socio-cognitive way. Observation of peer interactions in tutorial dyads means for us a necessary return to essential concerns about the socio-cognitive development of a deaf child.

Generally, in tutoring, tutor guides tutee. This educational form seems to be most efficient when completing the teachers' intervention (Oackland and Williams, 1995). The word « tutoring » first appears at the beginning of 1960 ies in the U.S.A. with the educational politics concerning poor social environment and for assisting the immigrant populations to integrate the land (Baudrit, 1999, 2).

It is only twenty years later that tutoring on scientific grounds appears. Tutoring is supported by theoretic references including social psychology and cognitive psychology. Social psychology compels a reading of the facts in threefold manner: individual subject – social subject – object (Moscovici, 1990, 9). Thus, tutoring, because it implicates a tutor, a tutee and a task, meets the definition of the object in social psychology, according to Moscovici. Cognitive psychology is also very important in tutoring. One can consider cognitive apprenticeship in tutelage relation. The studies of Piaget and Vygotski prevail on Doise to prove that a cognitive imbalance between two persons can surpass the person's own imbalance. This is the social – cognitive conflict. People in a tutelage relation make better progress by working together than individually (Gilly, 1988, 19).

### **Informal tutorial interactions with the deaf?**

If it has been noted that spontaneous situations of mutual aid, sometimes resemble tutorial situations, Tutors can be of the same age as their tutee with varied educational levels. They have to meet a tutee's needs when he has difficulties, counsel him and provide him with explanations. This is how tutors complement

teacher's actions. Actually tutoring is suited for new educational approaches. Tutoring indeed offers a relation consisting of help, advice and more individualised explanations. It allows tutees to benefit from a less conventional atmosphere, which is flexible and consequently in favour of adjustments. It is essentially used to complement school education, for disabled pupils notably.

In fact tutoring is a situation displaying a tutor helping and guiding a tutee. It is a pupil-oriented approach, that doesn't require any previous experience or training for the tutor. Goodlad (1998, 3) points out that tutoring is rather concerned with so-called school apprenticeship and is generally performed in a classroom for a relatively short period (a few weeks).

### **Research**

Our study (Dambiel-Birepinte, 2003) shows us different ways of communication between children. We can understand why tutees progress with their tutors. Some pairs have got together a hearing tutor with a deaf tutee or a deaf tutor. In all cases, the tutee was deaf.

### **The effects of a tutor's degree of deafness (deaf, semi – deaf, hearing) on a deaf tutee's progress.**

In order to check our hypotheses, we have used a dependant variable (progress - no progress) and an independent variable (three levels of hearing: deaf, semi – deaf and hearing), as well as three intermediate variables, shown in a previous paper (Dambiel, 1999) and to be mentioned later in this article. We distinguish between deaf, semi – deaf and hearing tutors to focus our attention on only three groups of tutoring children, which implies more precision than just distinguishing between deaf and hearing. At first sight however these three groups do not correspond to a conventional classification. For all that, we will use a classification established by the International Audio Phonology Office, which leads us to the following considerations: we have labelled "deaf" a profoundly or severely deaf child. In case of moderate or mild deafness, it's "semi-deaf" and lastly a child without any hearing loss is called "hearing".

### **Measurement of effects produced by variables**

We have set up an experimental quantitative approach, based on differences between average scores as displayed by the test of Student ItI, to measure differences between two groups. We have also used Snedecor F test to compare three groups to one another by means of a dual approach. On the other hand, the ANOVA test takes into account connections between independent variables (degrees of deafness) and intermediate variables, regarding the dependant one (results for tutees).

### **How to observe a level of language structuration**

We have equally used a classification provided by a Syntactic Organization Test of Taburiaux (T.O.S. in French) allowing us to make an objective assessment

of the level of language structuration of both tutor and tutee. This test has first been standardized by a team of specialists, then validated by testing on a larger hearing population. This test can be applied to deaf as well as some hearing children. This is the reason why we have found its use so interesting. We have to point out that we haven't used the whole test: we have only been inspired by its syntactic classification, which we have taken up and even adapted. To the three previously defined levels: associations of complex sentences, complex sentences, elementary sentences. We have added words or gestual sentences.

### Population and groups

For our research, we have brought together 95 children and organized them into 5 groups as follows: three experimental groups and two control groups. All these children were observed at school. Most of them, namely 82, have secured admission in special schools. For this purpose, 9 centres in France have been requested. One deaf child isn't joined in any special school, only in a local school. Lastly, the hearing children are from ordinary schools comprising special classrooms for deaf or semi deaf.

We have three experimental groups (EG). The first includes 19 deaf tutors (EG 1), the second includes 5 semi – deaf tutors (EG 2) and the last includes 13 hearing tutors (EG 3). All of these tutors are in charge of a deaf tutee during the tutorial interaction. To sum up, the different experimental groups present the following numbers, taking all tutees and tutors into account: EG 1 =38; EG 2 =10; EG 3 = 26.

Table representing different research groups, their characteristics and involvement at different times.

	group Characteristics	Numbers of tutees (t) + tutors (T)	Participation in pre-test	Participation in intermediate situation	Participation in post-test
<b>Experimental group n°1 (E.G.1)</b>	Deaf tutees Deaf Tutors	t=19 + T=19 (=38)	Yes	Yes in tutorial	Yes
<b>E.G.2</b>	Deaf tutees Semi-deaf Tutors	t=5 + T=5 (=10)	Yes	Yes in tutorial	Yes
<b>E.G.3</b>	Deaf tutees Hearing Tutors	t=13 + T=13 (=26)	Yes	Yes in tutorial	Yes
<b>Control group n°1 (C.G.1)</b>	Deaf children	16	Yes	No	Yes
<b>C.G.2</b>	Deaf children	5	Yes	Yes individually	Yes

The deaf tutees are from the first and second primary classes. The tutors are from the third and fourth years. Two Control groups are complementing this protocol. C.G.1 comprising 16 children have done the pre-test, then the post-test, without participation in the intermediate situation; comparing their results with those of the experimental groups, we can notice the contribution for tutorial situation in the others groups. However dyadic interaction can be seen as a training exercise for a tutee, who takes three tests, namely pre-test, interaction and post-test. In order to assess effects of this training, we have formed a second control group (C.G. 2) comprising 5 children. They benefit from an individual intermediate situation, with the same tests as those proposed for the experimental groups in dyadic interaction. This new control group enables us to evaluate positive effects of dyadic interaction in comparison with the experimental groups, whilst bearing in mind effects of training.

### **Situations of interaction**

Dyadic exchanges were carried out about a week after the pre-test. It was presented alike to tutors and tutees, to evaluate the level of their initial skills. Interactions took place between random pairs of children acting as tutors and tutees. The tutor was reminded of his tutorial instructions, without any further recommendation: to help the tutee with his exercises without actually doing them in his place. We have chosen not to impose any time limit on the tutorial interaction, in order to provide the time for carrying out the exercises. Some interactions were absolutely silent, but interactive in the way of gestures. A careful analysis was made afterwards, assisted by video recordings. A post-test took place about a week after the interaction, under the same conditions as the pre-test.

### **Exercises in support of dyadic interaction**

The teaching aids of these tests consist of exercises of a logical mathematical type and of spatial decentration, as introduced in under. Consequences of deafness on the command of French written language in particular, explain our preference for these types of exercises. The pre and post-tests comprise six exercises:

1. The first exercise titled “the combinations” adopts the form of a table with double entry. Contents of this table are shown at intersections of row and column, displaying superposition of figures featuring in entries. However, eight squares are resulting from bad combinations. They have to be found and coloured.

2. The second exercise consists of a set of sequential pictures, which have to be placed in right chronological order. The difficulty lies in the interference of two sub-sequences for which use of determining clues is needed. Should these not be perceived, then expected sequential order would not be restored. Juxtaposition of two sub-sequences has been a frequent mistake.

3. The third exercise requires mastery in additions and subtractions as well as use of strategies. A square consisting of columns and rows is complemented by small figures with small numbers written at the end. The value of each figure has to be deducted according to indicated numbers. The element has to be converted into a new value that in its turn will determine a next element's value and so on...

4. The fourth exercise is a magic square, with indication of expected sum. It is identical as well horizontally, vertically as diagonally. The exercise in question comprises a square with four boxes on each side, totalling 34. The mental operations which are needed to carry it out, should be simple additions and additions with missing numbers, or even subtractions.

5. The two last presented exercises refer to spatial decentration. The fifth exercise consists in observation of a landscape from above, as on a map. The elements of this landscape are schematized. The two schemes that correspond to the concerned landscape have to be found.

6. The last exercise implies discovering from which point of view an object is perceived. In this case, it is a house. Drawings of small characters are placed around it and instructions are to find out which part of the house is visible from the viewpoint of each small character.

### **Different results**

We find a quantitative approach to results, showing deaf tutees' progress through pre- and post -tests. We have also observed the behaviour of people interacting during tutorial situation. Exercises are done during the experimental situation and they require the same skills as those in action during the pre-test; tasks are different, in order to reduce any possible effects of training in pre-test exercises. The "Magic Square" for example, has a different sum and spatial orientation exercises refer to different objects.

### **Quantitative results**

#### ***Hearing tutors encourage deaf tutees to make significant progress.***

The group 3 (E.G. 3) that has worked with hearing tutors, has indeed shown significant progress in the Student ItI test ( $T = 3,17$  with  $p = 01$ ). We shall however be far more cautious about commenting on the actions of deaf and semi-deaf tutors with deaf tutees.

The group of tutees having worked with deaf tutors (E.G. 1) has made progress when considering the point's average (+2,26). However, this progress isn't significant with the Student ItI test with  $p = 01$ , that is to say, with a 99 % confidence level, unless introducing a relative threshold with  $p = 10$ , i.e. with a 90 % confidence level. These results are to be considered cautiously.

Group 2 (E.G.2) with semi-deaf tutors, did not produce any convincing results, but we have to take a balanced view of that because of their small numbers (5 tutees and 5 tutors).

Summary table of tutee's results according to their tutor (T) deaf (D) semi-deaf (S-D) or hearing (H): numbers, average scores expressed in points and statistic validation according to Student ItI test.

	Deaf tutees with deaf tutors (EG1)	Deaf tutees with semi-deaf tutors (EG2)	Deaf tutees with hearing tutors (EG3)
Numbers of tutees (t)	19	5	13
Tutees' scores: differences in points between pre-test and post-test	Progress + 2,26	Progress +1	Progress + 4
Evidence of Student's significant progress ItI	no with $p=.01$ [yes, with threshold $p=.01$ ]	no with $p=.01$ [no with threshold $p=.01$ ]	yes with $p=.01$

### Qualitative results

#### *Tutor and tutee becoming closer*

The qualitative results stemming from observation of interactions highlight some dominating factors like tutor and tutee becoming closer. This is valid from various standpoints: spatial, proxemic as well as relational, which corroborates what is referred to as a tutor's adjustment to tutee. Bringing together areas for communication is illustrated by a hearing tutor's use of more or less spontaneous gestures issued from his imagination, notably when speaking to a deaf tutee.

#### *In search of a space for mutual exchanges*

It is found that observation of contents of tutorial interactions brings to light recurrent behavioural tendencies: among these are modified modes of communication, in the sense that tutor and tutee draw closer to one another. A hearing tutor for instance tends to make gestures for his deaf tutee, who then uses them in his turn to communicate. Conversely, a deaf tutee uses oral communication in front of a hearing tutor, knowing this to be a tutor's way of communication. In fact, this is a matter of adjusting means of communication aiming to share a space favourable to interactions. Imitation seems to be preferred. It enables one to appropriate certain manners or get closer to another person, and share a space for communication with more or less complicity. Imitation aims to penetrate into others' social spheres and may result in interactions. Imagination plays an equal part in the desire to help tutees progress by means of original explanatory devices, favoured by hearing tutors.

### ***Transformed exercises***

Stress is equally laid on a deaf tutor's tendency to transform exercises and turn to cognitive methods closely related to a visuo-spatial approach in case of a difficult exercise. In a same situation, a hearing tutor gives up and moves to the next exercise. It also appears that visual methods very often, too often in fact, are applied to fill the gap of missing sound informations and straight away this dismisses consideration of other possible methods; leaving them out in fact penalizes deaf children. It is equally reported that deaf tutees displayed a certain attitude, one could say, of "wait and see". The handicap's links with mostly external interventions, which exceed a deaf child's demands or even anticipate them, seem to contribute to this attitude.

### ***In defence of mixed dyads***

A hearing tutor's mission is to build a space that is suitable for mutual exchanges. Simultaneously, he has to deal with the task in hand as well as with cognitive methods that are inappropriate and seem to act as a brake on deaf tutees. This is where mixed dyads are likely to prompt deaf tutees' evolution. We have to take into account the quite obvious positive effect of hearing children on the deaf, but also the necessity to supply the deaf child with modes of cognitive problem-solving different from those relying too systematically on visual perception. At a deaf tutor's instigation, tutorial situations then have to be staged to define the tutor's role. According to Lippitt (1979, 158), tutorial sessions allow him to improve his skills thanks to the tutee. This is called tutor-effect, because it favours progress and helps gain self-assurance. When this is asserted, it heightens self-esteem (Barnier, 2001, 256).

### **Discussion**

Tutors, whether hearing, semi-deaf or deaf, have equally taken the pre-test to assess their capacities to do the exercises. At this point spatial decentration tests appeared to have been performed less successfully by the hearing tutors; the same holds for sequential pictures. On the other hand, hearing tutors had greater success than the deaf in performing the "magic square" and the "deduction calculation" task.

### ***Better success rates for deaf tutors in spatial decentration tests***

If deaf tutors are better at tests of a prevailing visual nature, we believe this to be one of the consequences of an extensive use of eyesight, all the more so because their hearing is deficient. The use of the French Sign Language or even of Signed French speech, includes some mime, mimed action and even imitation. These methods of communication use space, as means of expression. Now we are able to understand why deaf tutors succeed better than hearing in doing tests that are based on visuo-spatial relations. However, not all of deaf children, and deaf

tutees in particular, have obtained success in this type of exercise. Gestual communication by itself is insufficient to replace the required cognitive processes. According to Piaget (1975, 172), if each child assimilates some outside element into a sensory motor or conceptual scheme, “this assimilation has to deal with specificities containing distinguishing features of the elements in question which is a matter of accommodation for the child”.

In the presented exercises, visual perception was not just required. It should be studied from different viewpoints that compel a deaf child to practice decentration from his own perception and move to perception of an object from different points of view. This type of process is a matter for accommodation that comprises more than just appropriating elements emerging from some perception. Spatial decentration should be replaced in “a whole combination of processes characterizing conceptual assimilation at the onset, from the moment composition of semiotic or symbolic function based on internalised imitation and verbal signs, enables the subject to bring up lacking elements, which naturally also modifies the assimilation process of present objects” (Piaget, 1975, 106).

Processes at work, beyond perception, are then referring to conceptualisation along the following lines: when an object’s perspective is changed, some elements disappear to be compensated for by others and we can be “facing a situation that is analogous to perceptive centration, comprising its two essential features: on the one hand an impossibility to embrace all simultaneously, for lack of sufficient dimensions of the vision field or of attention. On the other hand, systematic deformation, amounting to overestimation of centred elements and underestimation of peripheral” (Ibid., 139). If tutors are so successful in exercises initially requiring visual perception, necessarily in association with cognitive processes, why then shouldn’t they be more successful in exercises such as reasoning or arithmetic?

#### ***Hearing tutors better at magic squares, deductions and sums***

It appears that hearing tutor’s greater achievements in carrying out exercises that require more reasoning or mental deductions, would be due to their different cognitive functioning, which would be based on use of more flowing and refined language.

This is the way Oleron (1978, 131) perceives connections between language and thought. In his view use of “conventional language that has to construct a whole speech by means of a system of arbitrary signs not showing any analogy with referents” in fact facilitates greater conceptualisation. Indeed, use of signs qualified as arbitrary (referents) by Saussure (1983) having no connection with the objects they refer to (referents) assist thought in better using referents and consequently dealing with wider ranges of representations: seriations, relations... or use of generic words, for instance, will make it possible to mentally embrace the whole of comprised elements, without needing to name each separately. This is why use of referents will facilitate conceptualisation. If, according to Saussure,

using an arbitrary sign accounts for absence of links between the object “apple” for example and its corresponding word, this is not completely valid for all signs of Sign Language, that is used by deaf children; a fortiori this holds for gestures supposedly connected with mime. Thus application of various cognitive strategies may highlight differences between competences at work, and so duly activated.

### ***The semi-deaf: a difficult position***

As for semi-deaf tutors, their recorded achievements are definitely inferior to those of tutors of the two other categories (deaf and hearing). It is rather difficult to define the proper place of semi-deafness among hearing and deaf. Moreover, overall test results give advantage to hearing tutors.

### **To consolidate our findings**

These results are parallel with the American study by Burley, Gutkin and Naumann (1994, 415-419). It was carried out among profoundly deaf 13-year-old tutees, having learning difficulties with maths, and hearing tutors of the same educational level described as very good in this field. Hearing tutors with a minimal training in gestures (assimilation of 20 basic math signs) have been participating in interactions with deaf children. Just like the hearing, these children have made rather important improvements as a result of a tutorial situation; this holds for 70 per cent of the dyads. These authors equally mention that communication was no problem, so that intervention of a Sign Language Interpreter, present to guard against all eventualities, had but rarely been needed.

### **A parallel between tutor’s level and tutee’s progress**

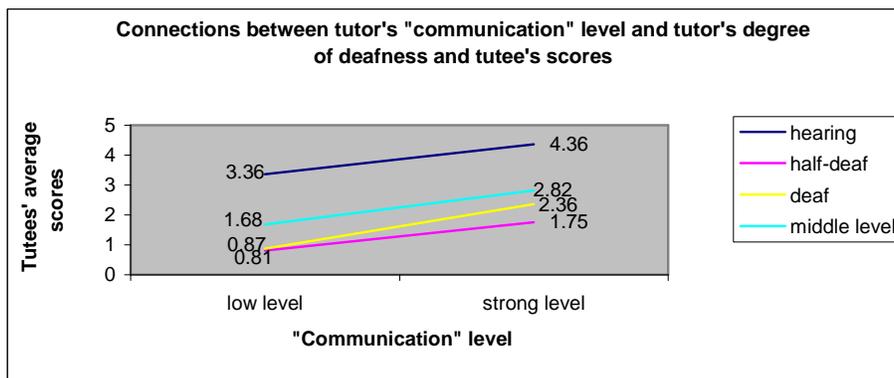
We have equally established a positive effect as regards tutor’s pre-test results his degree of deafness and tutee’s scores. These results however are not significant for the ANOVA test. Therefore, we are unable to assert the existence of an effective connection between a tutor’s pre-test results, his degree of deafness and tutee’s scores with a confidence level of 95 per cent. “Marks are illustrating a degree of mastery of exercises, presented for performing the task and “help” (tutorial), even minimal, suggests an initial asymmetry between knowledge of tutors and tutees; this asymmetry is obviously in favour of the first” (Baudrit, 1999, 134).

However, it is not sufficient for a tutor to master his subject, the question is rather how to guide his tutee. In our opinion, this type of dual relations automatically highlights the role of communication, and therefore of those elements likely to offer their contribution.

### **Components of communication and its effects on a tutee’s progress**

The same positive, though not significant effects have been observed regarding a tutor’s level of language structuration and degree of deafness and tutee’s scores.

It is the same for a tutor's adjustment to tutee and his degree of deafness with regard to tutee's scores. The same remark has been made about a tutor's level of adjustment to tutee and his degree of deafness in relation with tutee's scores. Ditto about a tutor's attention to tutee's results and a tutor's degree of deafness in connection with tutee's scores: the same is true of a tutor's guidance in tutee's reasoning and a tutor's degree of deafness related to tutee's scores. On the other hand, there appears to be a positive and significant effect of the "communication" variable and tutor's degree of deafness on scores obtained by tutees. This "communication" variable is constructed by means of intermediate variables, as previously highlighted (degree of deafness, level of language structuration, tutor's attention to tutee's results and tutor's guidance in tutee's reasoning).



Adding up these positive, though not significant, effects amounts to a confidence level of 95 % significance.

In terms of statistics, composition of this « communication » variable has levelled out existing differences since tutees' average scores are blended with another average, when considering the numbers of previously mentioned variables. So, irrespective of a tutor's degree of deafness, the following can be noted: the stronger his level of communication, the more striking the improvements. Unquestionably a hearing tutor's actions are prevailing (within a range from + 3,36 to + 4,36 points for progress). Semi-deaf tutors' actions are judged to be deceiving in this particular case, their efficacy on tutees' scores appearing to be less important (ranging from + 0,81 to + 1, 75 points for progress). Deaf tutors have prompted tutees to progress from + 0,87 to + 2,36 points.

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## FIRST PERSON NARRATIVE REVISITED

ALINA PREDA

*Motto: "Le spectacle commence avec la solitude."*  
Edmond Jabès

**ABSTRACT.** This paper is dedicated to a systematic presentation of the narrative category of person, with a focus on first-person narrative. Since Booth's narratological "Bible", narrative theorists have come far in their understanding of the category of 'person', which had, for a long time, remained surprisingly underworked, as if it had not been worthy of a more sustained analysis. Since the primary aim of this study is to offer a comprehensive analysis of autodiegetic/homodiegetic narration, the narratological framework offered here provides a systematic survey of the various approaches to first-person narrative, and a list of the narratorial instances identified by Norman Friedman, Franz Stanzel, Lubomir Doležel, Boris Uspenski, Jaap Lintvelt and Käte Hamburger.

**Keywords:** first-person narrative, homodiegetic narration, autodiegetic narration, telling versus showing.

**ZUSAMMENFASSUNG.** Diese Abhandlung setzt sich als Ziel eine systematische Vorführung der erzählenden Kategorie der Person, insbesondere der ersten Person Erzählung zu machen. Noch seit Booths erzählender „Bibel“, haben die Erzählungstheoretiker ein weitgehendes Verständnis für die „Person“ Kategorie gezeigt, das in sonderbarer Weise vorher lang genug allzu schwach ausgenutzt geblieben war, als wäre es keiner Aufmerksamkeit wert. Da das wichtigste Ziel dieser Abhandlung eine detaillierte Erläuterung der berichtenden Erzählung ist, ermöglicht der Erzählungsrahmen, der hier dargestellt wird, sowohl eine systematische Inkursion in den verschiedenen Behandlungsweisen der ersten Person Erzählung, als auch eine Liste mit Erzählungssituationen die von Norman Friedman, Franz Stanzel, Lubomir Doležel, Boris Uspenski, Jaap Lintvelt und Käte Hamburger identifiziert worden sind.

**SCHLÜSSELWÖRTER:** ersten Person Erzählung, berichtende Erzählung versus szenische Darstellung, Aussenperspektive – Ich-Form, Innenperspektive – Ich-Form.

In *The Rhetoric of Fiction* Wayne C. Booth asserted that “[p]erhaps the most overworked distinction [in narratology] is that of person.” However, since Booth's narratological "Bible", narrative theorists have come far in their understanding of the category of 'person', which, as even Booth eventually conceded in his

*Afterword to The Rhetoric of Fiction*, had, for a considerably long amount of time, remained surprisingly underworked, as if it had not been worthy of a more sustained analysis. This paper is dedicated to a systematic presentation of the narrative category of person, with a focus on first-person narrative.

It is by resorting to the two extreme points in time which mark the evolution of point of view in fiction that this concept can best be understood. Thus, Norman Friedman (1971: 111) described these two extremes as *Plato's distinction between "imitation"*<sup>1</sup> and *"simple narration"*<sup>2</sup>, and, respectively, *Joyce's distinction<sup>3</sup> between the author's presence in the three genres, lyric, epic and dramatic*: "The personality of the artist, at first a cry or a cadence or a mood [lyric] and then a fluent and lambent narrative [epic], finally refines itself out of existence [drama], impersonalizes itself, so to speak". These two moments, situated at opposite ends in the process of the Author's disappearance, are highly significant, shows Friedman (1971: 111-112), since point of view "provides a *modus operandi* for distinguishing the possible degrees of authorial extinction in the narrative art". Thus, using the two distinct criteria of "subjective telling" and "objective showing" he identifies eight narrative positions:

- editorial omniscience
- neutral omniscience
- selective omniscience
- multiple selective omniscience
- the dramatic mode
- the camera
- "I" as witness<sup>4</sup>
- "I" as protagonist<sup>5</sup>

The last two categories are also known, according to Genette's terminology, as, respectively, *homodiegetic* narration, and *autodiegetic* narration and the difference between them lies in the fact that the second implies a lower degree of mobility and a

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<sup>1</sup> "When the poet speaks in the person of another we may say that he assimilates his style to that person's manner of talking [...]" (Friedman, 1971: 110).

<sup>2</sup> "But if the poet everywhere appears and never conceals himself, then the imitation is dropped and his poetry becomes narration" (Friedman, 1971: 110-111).

<sup>3</sup> In *A Portrait of the Artist as a Young Man*, quoted by Friedman (1971: 111).

<sup>4</sup> "As [the author] denied himself personal commentary in moving from Editorial to Neutral Omniscience, so here, in moving to the "I" as Witness category, he hands his job completely over to another. Albeit the narrator is a creation of the author, the latter is from now on denied any direct voice in the proceedings at all. The witness-narrator is a character in his own right *within* the story itself, more or less involved in the action, more or less acquainted with its chief personages, who speaks to the reader in the first person. [...] The reader has available to him only the thoughts, feelings and perceptions of the witness-narrator; he therefore views the story from what may be called the wandering periphery" (Friedman, 1971: 125).

<sup>5</sup> "With the shift of the narrative burden from a witness to one of the chief personages, who tells his own story in the first person, a few more channels of information are given up and a few more vantage points are lost" (Friedman, 1971: 126).

smaller range of information than the first: “The protagonist-narrator, therefore, is limited almost entirely to his own thoughts, feelings, and perceptions” (Friedman, 1971: 127).

Whereas Friedman’s typology later came under scrutiny by other narratologists, its great merit is that, as different from earlier categorisations<sup>6</sup>, but also from some of the later ones<sup>7</sup>, it operates a distinction between the two types of homodiegetic narration<sup>8</sup>. Even in 1979 narratologists like Franz K. Stanzel omitted to make the above-mentioned distinction. With his *Theorie des Erzählens* Stanzel aimed to derive a comprehensive typology of all conceivable narrative structures by analysing the shifting relationship between the story and how it is being told. According to Stanzel, it is this relationship that gives rise to “the various kinds and degrees of mediacy” rendered<sup>9</sup> by novels and short stories. What Stanzel calls “mediacy” is the way in which the telling is mediated through the narrator’s voice. The three questions that he tries to answer by constructing his typology involve the three constitutive elements of mediacy:

- **Person:** Does the narrator belong to the world of the story, or to another realm of existence?
- **Perspective:** Does the narrator offer the reader an external (omniscient) view of the narrated events, or an internal (limited) one?
- **Mode:** Does the narrator directly convey information to the reader, (telling<sup>10</sup>), or is it filtered through the consciousness of one or more characters (showing<sup>11</sup>)?

For each of these possibilities of narrative mediation Stanzel offers a basic narrative position:

- First-person narrative, characterised by dominance of the fictive world, since the world of the characters is identical to the world of the narrator.
- Authorial narrative situation: characterised by dominance of the external perspective, since the narrator is situated outside the world of the characters.

<sup>6</sup> In 1921, Percy Lubbock, in *The Craft of Fiction*, identified only four narrative positions: the panoramic survey, the dramatized mind, pure drama, and the dramatized narrator, the latter corresponding to homodiegetic narration.

<sup>7</sup> Erwin Leibfried’s *Die Schicht der Typen* (1970) uses the narrative category of perspective and the grammatical one of person to identify four narrative positions: Aussenperspektive – Ich-Form, Aussenperspektive – Er-Form, Innenperspektive – Ich-Form, and Innenperspektive – Er-Form, the one but the last being the equivalent of homodiegetic narration.

<sup>8</sup> In my analysis I employ the term ‘homodiegetic narration’ in its larger sense, as a synonym of ‘first-person narrative’, and will not follow Genette’s terminology. Although I make the distinction between homodiegetic and autodiegetic narration, I regard the latter as a sub-category of the former, and, whenever necessary, I will use the term ‘autodiegetic’ to emphasise the distinction.

<sup>9</sup> The verb “to render” stands for the German “gestalten” which refers to the act of shaping, as well as to the one of in-forming.

<sup>10</sup> Friedman’s notion of *telling* is what Stanzel (1979: 70) calls *berichtende Erzählung*.

<sup>11</sup> Friedman’s notion of *showing* is what Stanzel (1979: 190) names *szenische Darstellung*.

- Figural narrative situation: characterised by dominance of the reflector mode, as there is no apparent narrator, instead, a reflector character thinks, feels and perceives, thus creating an illusion of im-mediacy.

Narrative situations are not necessarily fixed, they can change at any point but, according to the predominance of one narrative situation or another, a work can be assigned to one of the three types.

Jaap Lintvelt (1981), in his book on point of view, *Essai de typologie narrative. Le "point de vue"*, mentions two other attempts of classification done by the Czech structuralist Lubomir Doležel and by the Russian narratologist Boris Uspenski, both representatives of the 1970s. As Lintvelt (1981: 166-181) points out, since a purely linguistic approach seems insufficient to Doležel, he uses two models, the functional and the verbal model, as well as the traditional concepts **rhetoric**, **objective**, and **subjective**, associated with the German terms Er-Form and Ich-Form to identify six narrative positions<sup>12</sup>:

- Rhetoric Er-Form
- Subjective Er-Form
- Objective Er-Form
- Observer Ich-Form

(the narrating-"I" is a witness who has no interpretative function)

- Rhetoric Ich-Form

(the narrating-"I" is a witness who also performs an interpretative function)

- Personal Ich-Form

(the narrating-"I" is also a protagonist who has an interpretative function as well)

The last three types are forms of homodiegetic narration, and Doležel has the merit of distinguishing between these instances of first-person narrative.

Uspenski<sup>13</sup>, shows Lintvelt (1981: 182-192), tries to make a practical analysis of the possible points of view, rather than to construct a theoretical typology. He uses the fundamental dichotomy between the internal and external point of view, and distinguishes four levels of analysis: **ideological**, **phraseological**, **spatio-temporal** and **psychological**. Thus, he arrives at four narrative positions:

- fixed point of view – external perception
- fixed point of view – introspection of one character – external perception of the other characters
- variable sequential point of view – introspection of one variable character – external perception of other characters
- variable simultaneous point of view – simultaneous perception of several characters

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<sup>12</sup> Doležel, L. (1967). *The Typology of the Narrator - Point of View in Fiction*.

<sup>13</sup> Uspenski, B. (1970). *A Poetics of Composition. The Structure of the Artistic Text and Typology of Compositional Form*.

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Except for the first type in this sequence, all the others allow for an analysis of homodiegetic narration.

In 1981 Jaap Lintvelt<sup>14</sup> built a more detailed and better systematized narrative typology than the ones proposed from the 1920s to the 1970s. The narrative type is determined by the reader's centre of orientation, by his/her position in the fictional world, on one of the four levels: perceptive-psychological, temporal, spatial and verbal. These levels are the narrative categories used to classify the narrative criteria of narrative perspective, mode, person, etc. Lintvelt shows, in the following tables, a concise distinction between narrative types in hetero- versus homodiegetic narration:

**The narrative typology of heterodiegetic narration**

Centre of Orientation \ Narrative Type	Narrator	Character
Authorial	+	—
Figural	—	+
Neuter	—	—

**The narrative typology of homodiegetic narration**

Centre of Orientation \ Narrative Type	"I" as Narrator	"I" as Character
Authorial	+	—
Figural	—	+

Lintvelt (1981: 98-100) identifies five narrative types and presents them in relation to the three poetic genres. Thus,

- authorial heterodiegetic narration corresponds to the epic genre
- neuter heterodiegetic narration corresponds to the dramatic genre
- figural heterodiegetic narration comes half-way, between the dramatic and the lyric genre
- figural homodiegetic narration corresponds to the lyric genre
- authorial homodiegetic narration comes half-way, between the lyric and the epic genre

<sup>14</sup> Lintvelt, J. (1981). *Punctul de vedere. Încercare de tipologie narativă*.

This positioning of authorial homodiegetic narration echoes Käte Hamburger's discussion of first person narrative versus third person narrative. In *Die Logik der Dichtung* (1986 [1977])<sup>15</sup>, she attempts to draw a clear distinction between language and literary language, in order to determine the right place for the three traditional genres in the literary field. Thus, the epic genre is the realm of heterodiegetic narration only, while homodiegetic narration is discussed under the heading of "special, or mixed forms" (1986: 274). Moreover, only the epic genre (in the form of third-person narrative) and the dramatic genre are subsumed under the category of fiction, because the other types of discourse, among which the lyric genre and first-person narrative, cannot be categorised objectively according to indisputable criteria.

Hamburger reaches this conclusion after providing a theoretical frame that accommodates such distinctions as she wishes to make<sup>16</sup>. Thus, she makes the difference between the *current* use of language, the speech acts (énonces de réalité) which presuppose a polarity between the object referred to and the subject who makes the utterance, and the *literary* use of language<sup>17</sup>, which can serve either to present fictional characters as autonomous subjects, rather than objects of

<sup>15</sup> Hamburger, K. (1986). *Logique des genres littéraires*. Editions du Seuil. Traduit de l'Allemand par Pierre Cadiot.

<sup>16</sup> "Le concept d'énonciation que nous cherchons à analyser met la langue dans une autre relation à la réalité. La « langue » cesse d'être appréhendée comme un ensemble de mots ou même simplement de propositions susceptible d'être comparée avec une réalité concrète et spirituelle, qui en quelque sorte lui fait face et qu'elle est supposée refléter. Elle est au contraire conçue comme énonciation, c'est-à-dire structure sujet-objet devenue en quelque sorte fixe et qui entretient une certaine relation à la chose énoncée. Cela permet de préciser ce que met en jeu le concept de réalité, de le dégager de l'imprécision dans laquelle on le laisse chaque fois qu'on l'applique à ce à quoi l'énonce, mot ou proposition dans n'importe laquelle de ses modalités, réfère. Si l'on a pu montrer que tout énonce est un énonce de réalité, c'est, insistons-y une fois encore, que la notion de réalité ne décrit pas l'objet de l'énonce, mais le sujet d'énonciation, en sorte qu'un objet d'énonce « irréel » ne remet pas en cause la caractérisation de tout énonce comme énonce de réalité. La description de la langue non littéraire comme système énonciatif fournit une base de comparaison nécessaire pour celle des genres littéraires, c'est-à-dire pour le système de la littérature lui-même. Afin d'éviter tout malentendu (et éventuellement écarter ceux qui seraient apparus), soulignons de nouveau que ce système et la classification des genres littéraires ne renvoient à rien d'autre qu'aux formes linguistiques et n'est fondé que sur l'observation de ce qui fait qu'une langue est source de littérature et de poésie. La place du littéraire (*Dichtung*) doit être examinée dans le système énonciatif de la langue, et par rapport à lui. La description de la littérature en général comme « art du langage » s'appuie sur la relation entre la littérature et l'énonce/énonciation de réalité, au sens que nous avons défini. Les genres fictionnel et lyrique ainsi que les formes particulières du récit à la première personne et de la ballade seront décrits comme de variantes spécifiques de cette relation" (Hamburger, 1986: 26).

<sup>17</sup> "Seule pourtant la fiction épique, à l'exclusion de la dramatique, présente l'ensemble des phénomènes qui vont nous permettre de fonder cette opposition d'une façon pleinement convaincante. Seul le problème de la narration permet de faire apparaître les relations logico-cognitives et grammatico-sémantiques qui distinguent la fiction de la réalité. Ce n'est que dans la littérature narrative, et non dans la dramatique, que la langue vit et agit dans sa totalité; ce n'est que la qu'on peut montrer ce que signifie la production par la langue de l'expérience de la fiction, opposée à l'expérience de la réalité. Autrement dit, la structure logique de la fiction ne peut être élaborée qu'à partir de la différence entre énonce et fiction narrative" (Hamburger, 1986: 75).

discourse, or to produce speech acts devoid of communicative function and meant only to give shape to lived experience, inseparable from its utterance. In this latter case, characteristic of the lyric genre, the speech act can be assigned neither to a real-life subject (the author), nor to a fictional character. This yields up the conclusion that there really are only two literary genres: the epic and the dramatic<sup>18</sup>.

Hamburger (1986: 274-275) sees first-person narrative as an autobiographical form in which lived experience is presented by a narrator in the first person, the origin of this narrative style being autobiography proper. The homodiegetic narrator is an intruder, from a structural point of view, since the “I” characteristic for the lyric genre is used to present fictional events characteristic of the epic genre.

First-person narrative thus has elements belonging to both these genres, and also resembles the factual autobiographical genre. The “I” as protagonist does not pretend to be an “I” similar to the “persona” of the lyric genre, but could rather be seen as a real addresser, so the speech-act is genuine, and the difference lies in the fact that what is narrated constitutes only mock-reality (“réalité feint”), not genuine reality, as in the case of autobiography. This could explain the feeling of lived experience and truthfulness the audience experiences upon reading homodiegetic narratives (Hamburger, 1986: 278). The narrative function encountered in heterodiegetic narration is replaced, in homodiegetic narration, by a genuine speech-act, and since it is not the presence of a narrator but the narrative function that turns something into fiction, first-person narrative does not belong to the realm of epic fiction. In fact, even the concept of narrator is inaccurate for the “I” who speaks in first-person narrative, states Hamburger (1986: 279). First-person narrators have a limited point of view, subjective, and largely personal, as they are denied access to events they did not personally witness, as well as to the thoughts of other characters. But although the utterances of the “I” as protagonist are as likely to be subjective as any utterance made in real life, it is still homodiegetic narration that involves the reader more completely into the events narrated and facilitates not only empathy, but also the belief of the audience in the truth of whatever is stated.

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<sup>18</sup> “C’est pour des raisons théoriques, proprement linguistiques, que nous entamons la description du système de la littérature par le récit à la troisième personne, i.e. la fiction épique. L’identification de la fiction épique et du récit à la troisième personne qui s’opère grâce à cette définition ne vaut pas pour l’ensemble de la littérature narrative: celle-ci inclut en effet également le récit à la première personne. Or, comme nous le montrerons, ce dernier n’est pas une fiction au sens qui est le notre (et qui, nous avons dit, relève de la théorie linguistique du littéraire). Ce qui précède nous a permis d’établir que le concept de fiction n’est pas défini de manière satisfaisante par la notion d’invention, ce qui aurait pour effet qu’une narration à la première personne imaginaire, et à ce titre « fictive », satisfèrait au concept de fiction; et ce n’est pas non plus la structure narrative de la littérature à la première personne, mais seulement celle de la littérature à la troisième personne, fictionnelle au sens strict, qui peut servir de point de départ pour la description linguistique de la littérature. C’est en effet la fiction narrative qui occupe la place décisive dans le système de la langue, qui marque la frontière entre le genre fictionnel ou mimétique (fiction épique et, par voie de conséquence, dramatique) et le système énonciatif de la langue. De ce fait, la structure de la fiction narrative ne peut être élaborée que par comparaison avec l’énonciation dont on a présenté ci-dessus, dans ses traits fondamentaux, la structure sujet-objet” (Hamburger, 1986: 72).

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## FÖRDERUNG MIT COCHLEAR-IMPLANT IN DER PRAXIS

RODICA POPESCU

**ABSTRAKT. Förderung mit Cochlear-Implantat in der Praxis.** *Eine unadingbare Forderung des hörgerichteten Spracherwerbs ist die optimale apparative Versorgung des hörgeschädigten Kindes. Wie Veröffentlichungen und Praxiserfahrungen – besonders in den vergangenen sechs Jahren – gezeigt haben, ist bei Kindern, die trotz hörgerichteter Erziehung die Lautsprache mit Hilfe von Hörgeräten nicht in befriedigendem Maße erlernen konnten, das CI ist bessere Alternative.*

**Schlüsselwörter:** Frühförderung, Hörerziehung, Kommunikationsanregung, Tätigkeiten, Lautsprache

Wie sehr es sich als Alternative zu den Hörgeräten für bestimmte Kinder durchgesetzt hat, zeigt die Tatsache, das inzwischen an vielen Schulen für Hörgeschädigte im Land, besonders in Sibiu, die Anzahl der cochlear-implantierten Kinder in den letzten Jahren beträchtlich gestiegen ist. Auch an den Regelkindergärten und -schulen tragen immer mehr hörgeschädigte Kinder ein CI.

Die Ergebnisse nach erfolgter Cochlear-Implantation sind stark abhängig vom jeweiligen Implantationsalter des Kindes. Auch die Art der Förderung orientiert sich am Alter des Kindes. Die Faktoren Zeit, Wiederholung und Kontinuität spielen bei allen Entwicklungsprozessen eine entscheidende Rolle.

Nach der Implantation müssen die Kinder regelmäßig – am besten täglich – eine individuelle Förderung bekommen.

Ich habe, mit mein Team, ein Rehabilitationsprogramm für Hörgeschädigte mit Cochlea Implantat entworfen, das folgerndes beinhaltet: Tätigkeiten für Hörtraining und Hörerziehung, Tätigkeiten zur Wahrnehmung/zum Erkennen der Umwelt und Kommunikation in dieser Umgebung, Tätigkeiten zur Förderung der Kommunikationsfähigkeiten, der rhythmischen Erziehung (erstmal eingeführt als selbstständige Tätigkeit in der Rehabilitation des hörbeschädigten Kindes), Kinder-Eltern-Gruppe. Das Verhalten und die Entwicklung des implantierten Kindes wurde sowohl innerhalb der eigenständigen Tätigkeiten als auch innerhalb der individuellen sowie innerhalb der Gruppe, in der das Kind integriert ist, verfolgt. Es wurden besonderes gute Ergebnisse im Rahmen der abgewickelten Tätigkeiten in der Gruppe und unter Wettkampfbedingungen festgestellt.

Es wurden verschiedene Spielübungen und Strukturen für jede Kategorie von Tätigkeiten angepaßt und entworfen, die auf der theoretischen und praktischen Erfahrung während der Fortbildung ruhen/gründen.

Im Falle des implantierten Kindes sind wir von der Voraussetzung ausgegangen, daß es – zumindestens vom theoretischen Standpunkt - dasselbe ausführen kann wie ein guthörendes Kind und daß unter den Bedingungen der Frühförderung und korrekten Rehabilitation seine Entwicklung ähnlich wie die eines guthörendes Kindes sein kann. Ich habe die übertriebene Mimik sowie eine hohe Lautstärke der Stimme vermieden. Meiner Meinung nach, ist die Verbalisierung von besonderer Bedeutung, wobei der Verbalismus unproduktiv ist, und daß jede Situation des Alltages ein Grund zum Dialog, zur Bildung/Förderung und Entwicklung des Lautsprache darstellt. All dies haben die Personen (Pädagogen, Lehrer, Erzieher und nicht zuletzt derer Eltern und Verwandten), die sich im Kontakt mit implantierten Kindern befinden, berücksichtigt.

### **Tätigkeiten zur Hörerziehung**

Die Hörerziehung erfolgt sowohl innerhalb eines organisierten Rahmens (durch gezielte Sondertätigkeiten) als auch eines unorganisierten (so oft es die Situation erlaubt), sowohl mit Musikinstrumenten und Gegenständen, die Schallquellen darstellen (nicht-verbaler Hörtraining) als auch mit der Stimme (verbaler Hörtraining).

Durch die Hörerziehung wird folgendes verfolgt:

1. Bildung und Entwicklung der Reaktionsfähigkeit auf nicht-verbale Töne, Geräusche und Stimmen.
2. Entwicklung der Fähigkeit, Töne nach ihren Charakteristika zu differenzieren.
3. Bildung und Entwicklung der rhythmischen Fähigkeiten.
4. Entwicklung der Höraufmerksamkeit.
5. Entwicklung des Hörgedächtnisses.

Die Tätigkeiten zur Hörerziehung vermitteln dem Hörgeschädigten mit Cochlea-Implantat folgendes:

- Töne/Geräusche der Umgebung wahrzunehmen;
- die Quelle der Töne/Geräusche (Ton/Schallquellen) zu identifizieren;
- Gegenstände, die Schallquellen darstellen, zu identifizieren;
- die Reaktionsfähigkeit auf Geräusche und nicht-verbale Töne, auf die Stimme anzuregen;
- Schallquellen aus der Umgebung zu identifizieren und differenzieren;
- die Lautstärke der Töne/Geräusche (leise, laut, mittelmäßig) wahrzunehmen, zu differenzieren und wiederzugeben;
- die Lauthöhe der Töne/Geräusche (hohe, niedrige) wahrzunehmen, zu differenzieren und wiederzugeben;
- Tempovariationen wahrzunehmen und wiederzugeben (langsam, schnell);
- die Fähigkeit, die Tonquelle zu lokalisieren (Richtung der Tonquelle);
- Dauer der Töne/Geräusche wahrzunehmen, wiederzugeben und zu differenzieren;

- Folge der akustischen Elemente wahrzunehmen (lange/kurze, betonte/unbetonte);
- Sprechstrukturen zu identifizieren, diskriminieren und wiederzugeben;
- einen Rhythmus wahrzunehmen und wiederzugeben;
- bei einem bestimmten Rhythmus, der durch Händeklatschen oder Fußstapfen erzeugt wurde, bestimmte Gegenstände oder Musikinstrumente zu verknüpfen;
- Rhythmus herzustellen;
- die Höraufmerksamkeit zu entwickeln;
- das Hörgedächtnis zu entwickeln;
- das Sprechen zu verstehen.

Abgesehen von der erzielten Hörerziehung sollen folgende Bedingungen beachtet werden:

- eine stille Umgebung;
- den Kindern soll die Neugierde betreffend die geplante Tätigkeit geweckt werden;
- die Kindern sollen sich konzentrieren,
- Freude haben, Töne zu hören und erzeugen,
- den Wunsch äußern, Musikinstrumente zu benutzen.

Für das nicht-verbale Hörtraining wurden folgende Programme benutzt:

„Detektiv Langohr“, „Hör mal“ – das Hörspiel für groß und klein mit Cili, „Förderspiele Hörspaß“.

**Detektiv Langohr** ist ein PC-Spiel das 72 Töne/Geräusche/Onomatopöie, die Haus- und wilde Tiere (Affe, Elefant, Ente, Fliege, Grille, Henne, Hahn, Hund, Katze, Kuckuck, Kuh, Löwe, Pferd, Schaf, Vogel usw.), Musikinstrumente (Trommel, Trompete, Harfe, Glocke, Pauke usw. ), Transportmittel (PKW, Zug, Fahrrad, Flugzeug usw.), Mensch (Lachen, Weinen, Husten, Beifall, Niesen, Pfeifen, Schnauzen usw.), Gegenstände, die Schallquellen darstellen können (Bohrmaschine, PC, Haarföhn, Fotoapparat, Schere, Staubsauger, Telefon, Tür, Wecker usw.) erfaßt.

Enthält 6 Spiele, die die Hörerziehung des Kindes mit Cochlea-Implantat fördert:

- „Geräusche“: es können verschieden Geräusche des Alltags erlernt werden (Türknall, Zerschlagen eines Fensters, einen Moneten- auf den Tisch geworfen usw.), Onomatopöie verschiedener Haus- und wilden Tieren, Töne verschiedener Transportmittel (Pkw, Bahn, Laster, Klingel des Fahrrads, Flugzeug, Helikopter), verschiedene menschliche Gefühlszustände und Äußerungen (Lachen, Weinen, Niesen, Husten usw.);
- „Was hörst du?“: es werden verschiedene Töne/Geräusche mit den entsprechenden Bildern erlernt. Es wird ein Ton/Geräusch wiedergegeben. Das Kind soll das dem Ton entsprechende Bild erkennen und es mündlich/verbal wiedergeben;

- „Die Falle“ – es wird dem Kind verlangt, die Schallquelle nach dem gehörten Ton/Geräusch aus dem Haus / Baum / Tunnel zu erkennen. Die richtigen Antworten werden mit einem Tonsignal markiert.

- „Differenzierung“ – es wird dem Kind verlangt, Geräusche nach ihren Eigenschaften zu differenzieren: Höhe, Länge, Stärke.

- „Töne/Geräusche ins Gedächtnis einprägen“ – in einer besonders attraktiven Art die Entwicklung des Hörgedächtnisses gefördert (es sollen die in den Apfelbaum versteckten Paar-Töne/Geräusche entdeckt werden).

- „Wann hast du diesen Ton/dies Geräusch gehört?“ – Spiel für das Hörgedächtnis (4 oder mehrere Bilder sollen in der Hörfolge aufgestellt werden).

„**Hör mal**“ – **das Hörspiel für groß und klein mit Cili**, wurde für mehrere Ebenen entworfen, je nach Schwierigkeitsgrad, um Töne und Geräusche aus dem Wald, Haus, von der Straße, Tierstall und –hof zu erkennen.

„**Förderspiele Hörspaß**“ ermöglicht, Töne/Geräusche zu erkennen, Töne/Geräusche nach bestimmten vorgegebenen Kriterien auszuwählen, verschiedene Töne/Geräusche aufzufinden und zu diskriminieren unter verschiedenen Bedingungen (zum Beispiel, Hintergrundgeräusch). Der Inhalt ist nach verschiedenen Themen eingeteilt, von einfach bis schwierig und ermöglicht, die Ergebnisse des Kindes gleich einzuschätzen.

Für das Sprech/Hörtraining wurde **Schubi Foto – Didac** angewandt, das Themenvarianten beinhaltet wie: Lebensmittel, persönliche Artikel, Präpositionen, Tätigkeiten. Dies Material ermöglicht, verschiedene Spiele zu organisieren und dabei die Verbalisierung zu fördern.

Nebenbei haben wir zwecks Hörerziehung mehrere **Spiel-Übungen** entworfen und angewandt.

Die Übungen zur Hörentwicklung wurden gesteigert, nach ihrem Schwierigkeitsgrad angewandt.

### **Tätigkeiten zur Kommunikationsanregung**

Um die Kommunikationsfähigkeiten zu fördern und entwickeln erfolgt die Kommunikation mit dem Cochlea-implantierten Kind sowohl in einer organisierten Weise, indem es die Umwelt kennenlernt und mit seiner Umwelt kommuniziert, so wie für seine Gruppe, der er angehört, vorgesehen wurde als auch in nicht organisierter Weise, so oft sich die Gelegenheit ergibt, Umstände entstehen, die die Kommunikation notwendig machen und/oder anregen.

Die Anregungstätigkeiten der Kommunikation ermöglichen, die Umwelt wahrzunehmen und kennenzulernen, fördern die Fähigkeit, sich mündlich auszudrücken, die mündliche Mitteilung aufzunehmen.

Nachdem die Tätigkeit im Rahmen des verbalen Therapieraumes grundsätzlich die Kommunikation Lehrer-Kind mit CI voraussetzt, ermöglicht die Tätigkeit innerhalb der Gruppe dem Kind mit CI sich mit anderen Kindern mündlich auszutauschen.

Somit wird jede Woche ein neues Thema gewählt je nach reellen mündlichen Kommunikationsmöglichkeiten der Kinder der Gruppe, ihren Interessen, den wichtigen Ereignissen jener Woche.

Je nach ausgewähltem Thema sollen die Kinder nach Bildern erzählen (aus Büchern oder Zeichnungen des Lehrers), ein Theaterstück aufführen, ein Rollenspiel erstellen.

Ausgehend ist ein einfaches mündliches Material, das schrittweise erweitert werden soll. Besonderes wichtig ist die Bildunterlage für das korrekte Verstehen der mündlichen Mitteilung seitens der Kindes mit CI.

Einen besonderen Wert wurde dem Dialog Lehrer-Kind sowie Kind-Kind eingeräumt. In den ersten Etappen stellt der Dialog Lehrer-Kind ein Modell für das Kind mit CI dar und soll vom letzteren nachgeahmt werden. Der Dialog wurde ständig der reellen Kommunikationsebene des Kindes mit CI angepaßt. Es wurde verfolgt, daß die Kommunikationsmöglichkeiten das Kind anregt, aktiv am Dialog teilzunehmen. Es wurde ein einfacher Dialog mit kurzen, klaren Sätzen angewandt, der dem Kind ermöglicht, die mündliche Nachricht zu verstehen. Schrittweise wurde der Dialog weiterentwickelt und komplizierter gestaltet. Den Kindern wurde nicht nur abverlangt, auf Fragen zu antworten, sondern Fragen zu stellen, wobei diese Fähigkeit sich durch Übung entwickelt. Es wurde ebenfalls das Rollenspiel, das sehr wichtig für die Bildung und Entwicklung der Kommunikationsfähigkeiten ist, empfohlen.

Den Eltern wurde geraten, dasselbe Verhalten in der Kommunikation mit dem CI-implantierten Kind anzunehmen, seine verbalen Initiativen zu übernehmen, mündlich alle Interventionen und Wünsche des Kindes auszunutzen.

Es wurden Märchen mit Wiederholungshandlungen ausgewählt, die den Kindern zusagen und ihnen ermöglichen, sich mündliche Modelle anzueignen. Nachdem der Lehrer das Märchen erzählt und sich Bildern bedient (es werden Bücher mit wenig Text und vielen Bildern empfohlen), das Kind wird angehalten, das Märchen wieder zu erzählen, anfangs aufgrund der Fragen des Lehrers, danach in einfachen, klaren Sätzen mit Ausrufewörtern und Onomatopöie.

Die Themen aus dem Alltag wurden als besonderes wichtig empfunden. Sie ermöglichen einen reellen Dialog, der unter konkreten Umständen wieder aufgenommen werden kann (zum Beispiel: das Thema „Beim Einkauf“ kann in einem Laden wiederholt werden, ein jedes Kind macht kleine Einkäufe).

Die „Sprachfehler“ der Kindes mit CI wurden durch Wiederholung des Wortes, des jeweiligen Satzes vom Lehrer/von den Eltern korrigiert. Die Eltern wurden vorgewarnt, daß ein verändertes Verhalten dem Kind gegenüber (Unzufriedenheit, Unterstellung einer Lieblingstätigkeit usw.) eine negative Auswirkung auf das Kind hat. Es könnte das Selbstvertrauen verlieren und sich sogar weigern mit dem Lehrer und den Kollegen zu kommunizieren. Sie wurden aufgefordert, das Kind auch bei den bescheidensten Versuchen zu ermutigen.

Beispiele von angewandten Themen: „Wilde Tiere und Haustiere“, „Das Waldhäuschen“, „Geschirr und Besteck“, „Lebensmittel“, „Den Tisch richten“, „Wir haben Gäste“, „Sommerkleidung und -schuhe“, „Die Puppe geht spazieren“, „Beim Spaziergang“, „Farbenspiel“, „Beim Doktor“, „Beim Puppentheater“.

Um die Bildung und Entwicklung der Kommunikationsfähigkeiten zu sichern, steht das Hörtraining in enger Verbindung zum gewählten Thema. Die Spiel-Übungen innerhalb des Hörtrainings und der Hörerziehung wurden nach dem festgelegten Thema erarbeitet.

Eine andere Möglichkeit, die die Kommunikation des Kindes mit IC zu fördert, ist, ein **Tagebuch** anzulegen. Dies soll Fotos, Zeichnungen, Bastelarbeiten, die das Kind mit den Eltern gemacht hat, beinhalten. Es soll Tätigkeiten des Kindes (im Zirkus, in der Schwimmhalle, im Zoo, im Grünen, beim Spaziergang mit dem Fahrrad), Ereignisse aus seinem Leben (Geburtstagsfeier des Kindes, der Eltern, der Großeltern, Nikolaus, Weihnachten, erster gezogener Zahn, Ostereierfärben) illustrieren. Jede Zeichnung soll von einem sehr kurzen Kommentar begleitet ein (ein, zwei Sätze oder Satzgefüge). Das Tagebuch ermöglicht dem Lehrer und dem Kind mit CI die Situationen zu kommentieren, sie wiederzuerzählen, die Kommunikation des Kindes zu fördern und somit seinen Wortschatz zu erweitern.

### **Bildung der Kommunikationsfähigkeiten**

Die Tätigkeit innerhalb des mündlichen Therapieraumes setzt sich zum Ziel, die mündlichen Kommunikationsfähigkeiten des Kindes mit CI und die Korrektur der Sprachstörungen (unnatürliche Laute, Fehlen, Verdrehen und Ersatz von Tönen usw.) herauszubilden. Bei dieser Tätigkeit sind in der Regel der Hörgeschädigtenpädagoge und das Kind mit CI anwesend. Am häufigsten wird das mündlich eingesetzte Material zum planifizierten Thema der Gruppe wiederholt, jedoch in einer anderen Form, um dem Kind das Interesse zu erwecken. Die Tätigkeit im Kabinett befolgt dieselben strengen Grundsätze – Verbalisieren, nicht Verbalismus, mündliches Material das sich von einfach zu komplex entwickelt, Rollenspiel, Rollentausch, Spiel-Übungen, intuitives Material, Zeichnungen, Bilder.

Es wurde Spiele wie Lotto, Schubi Foto- Didac, Märchen- und Zeichentricksbücher eingesetzt.

### **Rhythmik**

Verfolgt beim Kind nicht nur eine rhythmisch-musikalischen Erfahrung, sondern auch eine sensorisch-motorisch und psycho-soziale Erfahrung.

Nach meiner Fortbildung in Deutschland und ich die Fachliteratur (Edleditsch, H., (2001), Feudel, E., (1994), Kloppel, R.; Vliex, S.; (1997), Peter-Uhle, S.; (1994)) angeeignet habe, wurden für jede strukturelle Sequenz Spiel-Übungen entworfen, die ich innerhalb der Kinder-Eltern-Gruppe und der wöchentlichen rhythmischen Tätigkeit angewandt habe. Im Unterschied zur Therapie, die abgesehen von der Art und Weise, meistens individuell erfolgt, ist die

Rhythmik eine Gruppentätigkeit, die Übungen werden in der Kindergartengruppe angewandt, in der das Kind mit CI integriert ist. Ansonsten wurden in bestimmten Etappen des Rehabilitationsprogrammes bessere Ergebnisse beim Kind mit CI innerhalb der Kindergruppe als innerhalb der individuellen Arbeit erzielt.

### **Kinder-Eltern-Gruppe**

Es ist eine Tätigkeitsform, die auch Eltern als aktiver Teil in der Rehabilitation des Hörbeschädigten einschließt, bzw. auch des Kindes mit CI. Zur Kinder-Eltern-Gruppe gehören neben dem Hörgeschädigtenpädagogen und die hörbeschädigten Kinder auch derer Eltern. Die Gruppe kommt mit einem Angebot sowohl für die Kinder als auch für derer Eltern.

Das Angebot für die Kinder:

- Hörtraining und Hörerziehung;
- musikalische und rhythmische Erziehung;
- Förderung in der Bildung und Entwicklung der Sprache in der Gruppe

und individuell;

- Bau- und Modellingtätigkeit;
- praktische Tätigkeiten.

Das Angebot für die Eltern:

- Beratung bezüglich verschiedene Themen:

- Hörbeschädigung (Ursachen, Grade, Arten der Hörbehinderung);
- Versorgung mit CI (was das Cochlea Implantat bedeutet, wie es funktioniert, wie es gepflegt wird, seine Grenzen und Vorteile usw.);
- Schulungsmöglichkeiten;
- Bildungs- und Erziehungsmöglichkeiten;
- Angehungsmodelle des hörgeschädigten Kindes;
- Schwierigkeiten in der Erziehung des Kindes und andere Sonderangelegenheiten;
- Ermöglichung des Informationsaustausches zwischen den Eltern von Hörgeschädigten Kindern.

Die Tätigkeit innerhalb der Kinder-Eltern-Gruppe hat sich zum Ziel gesetzt, die Eltern darauf vorzubereiten, die Rehabilitation auch in den Ferien fortzusetzen, die im Kindergarten begonnen wurde.

Die Effizienz des erarbeiteten Rehabilitationsprogrammes wird durch zwei Fallstudien veranschaulicht. Es handelt sich um zwei Kinder mit CI im Alter von 5 Jahren, bzw. von 5,4 Jahren.

### **Beispiel 1**

#### **Persönliche Daten:**

Name und Vorname: M.A.

Geburtsdatum: 17.05.1999

Geschlecht: männlich

**Audiologische Diagnose:** beidseitige schwergradige neuro-sensorielle Hypoakusie

Durchschnittlicher Hörverlust: rechtes Ohr: 120 dB

linkes Ohr: 118,75 dB

**Persönliche Geschichte:**

Eheliches Kind, deren Eltern keine Hörschwierigkeiten haben. Er hat einen kleineren hörgeschädigten Bruder (beidseitige schwergradige neuro-sensorielle Hypoakusie). Die Eltern sowie die Ärzte fanden keine Erklärung für die Hörbeschädigung beider Kinder. Die Schwangerschaft und Geburt verliefen normal. Als das Kind 10 Monate alt war, reagierte es nicht auf sonore Reize (Geräusche der Haushaltsgeräte, Fernseher), Stimme (als er mit Namen genannt wurde), machten sich jedoch keine Gedanken, nachdem der behandelnde Kinderarzt nichts auffälliges fand. Im Alter von 1 Jahr und 10 Monaten wurde die Hörbeschädigung bestätigt. Einen Monat später wurde er beidseitig mit Hörgeräten versorgt.

Nachdem keine wesentliche Verbesserung infolge der Versorgung mit Hörgeräten eintrat, erhielt das Kind ein Cochlea- Implantat im Mai 2004 (als es 5 Jahre alt war).

**Bildungserfahrung:**

Nach dem CI folgten 6 Monate lang logopädische Sitzungen beim HNO-Spital Panduri, Bukarest. Seit September 2002 besucht er den Sonderkindergarten innerhalb der Sonderschule Nr. 2 (für Hörbeschädigte) Sibiu. Die Eltern nehmen am Treffen der Kinder-Eltern-Gruppe teil und sind besonderes interessiert in der Rehabilitation ihres Kindes.

**Einschätzung des Rehabilitationsprogrammes (Mai 2005)**

**Vor dem Cochlea Implant**

Als er in den Kindergarten kam (**Schuljahr 2002-2003**), brachte er bestimmte Signale, Vokalisationen, Schreie heraus und äußerte sich durch Gesten, um die Aufmerksamkeit auf sich zu lenken. Übrigens stellt diese Haltung die wichtigste Kommunikationsweise mit den Erwachsenen dar. Auf dieselbe Weise äußert er auch seine Unzufriedenheit. Er hat typische Reaktionen, um den Widerwillen auszudrücken. Er nimmt an der Gruppentätigkeit nicht teil, mag kein Spiel mit anderen Kindern und um so weniger mit Erwachsenen. Er nimmt ein Kleidungsstück von zu Hause, stellt sich neben die Tür und wartet, bis daß ihn die Eltern nach Hause führen. Er weint und stoßt alle Personen, die sich ihm nähern, ab, will den Platz nicht verlassen und an bei keiner Tätigkeit mitmachen. Die erzeugten Vokale/Laute sind zufällig.

Nach der Anpassungszeit habe ich festgestellt, daß er auf laute Töne reagiert (Trommel aus seiner unmittelbaren Nähe).

Phonematischen Aneignungen: in dieser Zeit (2002-2003) bringt er einige Töne heraus: die Vokale a, o, u, die Konsonanten p, t, m, b. Mit großer Schwierigkeit gelingt es ihm die Phoneme in Logatome und kurze Wörter zu verbinden.

### **Schuljahr 2003-2004**

Er integriert sich in die Kindergruppe, nimmt gerne an den vorgeschlagenen Tätigkeiten teil. Er konzentriert sich auf einen Gegenstand (Spielzeug, Buch, Bilder, Spielsteine), wenn sie ihn interessieren. Er will sich behaupten und Regeln festlegen.

Phonematische Aneignungen: er spricht fast alle Phoneme aus, ausgenommen: z, j, î, c, g, h, i, r, ț. Er differenziert nicht die stimmlosen von den stimmhaften Phonemen, verbessert sich jedoch durch Lippenablesung.

### **Sprachentwicklung**

Ausmaß des Wortschatzes

Expressive Sprache

2002-2003 – 7 Wörter, Onomatopöie einiger Tiere entsprechend, Transportmittel und Musikinstrumente.

2003-2004 – 20 Wörter.

Die rezeptive Sprache beinhaltet ungefähr 35 Wörter.

Alle Wörter wurden angeeignet und werden durch die klassische Entstummungsmethode wahrgenommen.

Nachdem er einen großen Hörverlust verzeichnet, haben die Hörgeräte das Resthörvermögen nur im kleinsten Maße gefördert. Es gab Reaktionen auf kräftigen Trommelschlag und nahe laute Geräusche. Nach der Hörerziehung ist es ihm gelungen, einige Töne und Geräusche zu erkennen und zu differenzieren sowie: die Trommel, claves, einige sonore Spielzeuge, den Telegong, das Zuschlagen der Tür.

### **Nach dem CI**

Kurz nach dem Aktivieren und den ersten Einstellungen trat eine bedeutende Änderung im Verhalten des Kindes ein, eine Tatsache, die sowohl der Defektologe als auch die Eltern feststellten. Das akustische Wahrnehmen einiger Töne/Geräusche wirkte heftig auf ihn ein. Auf einmal wurde er sehr aufmerksam und es interessierte ihn alles, was sich um ihn ereignete. Er erfreut sich beim Hören verschiedener Töne/Geräusche. Er signalisiert dem Erwachsenen, daß er hört und will über die Tonquellen informiert werden.

Er reagiert auf verschiedene Töne/Geräusche und nachdem er sie identifiziert und mithilfe des Defektologen oder der Eltern versucht er, sie selber zu produzieren.

Er verlangt Musikinstrumente, „spielt“ darauf mit Freude, erkennt die zu „lauten“ Töne, gibt den Rhythmus wieder (die er wahrnimmt), differenziert Töne verschiedener Stärken, erkennt die Pause, verschiedene Zeitmaße und kann die Richtung, aus der der Ton kommt, anzeigen.

Er reagiert auf die Stimme und, um die Bedeutung der Wörter zu verstehen, benutzt er das Lippenablesen.

Er führt einfache Befehle aus. „Komm!“, „Geh!“.

Er erkennt seinen Namen (auf Hörebene), er findet Gefallen gerufen zu werden und antwortet mündlich darauf („Ja!“).

Er erkennt (nach dem Gehör) einige übliche Wörter: „Tschüs“, „Mama“, „Papa“, „Ei“, „Wasser“ und einige Onomatopöie (mit dem Wortsinn): „brr!“ (PKW), „uuu“ (Bahn), „ham-ham (wau-wau“ (Hund), „muh“ (Kuh), „bä“ (Schaf), „piep“ (Küken), „sss“ (Schlange), „schschsch! schsch!“ (Schnarchen), „ahhhh“! (Verwunderung).

Nach ca. 6 Monaten befand sich die Hörschwelle innerhalb normaler Grenzen (bei 30 dB), so daß die Bedingungen erfüllt waren, die Sprache wahrzunehmen und zu verstehen.

### **Ergebnisse letzter Einschätzungen (Mai 2005)**

Es gelingt ihm, vom Hören her 40 der 72 Töne/Geräusche/Onomatopöie des Programms „Detektiv Langohr“ zu erkennen und die Aufgaben betreffend Töne/Geräusche/Onomatopöie zu lösen.

Beim Programm („Hör mal – das Hörspiel für groß und klein mit Cili“) hat er die mittlere Stufe erreicht.

### **Umfang des Wortschatzes**

Die expressive Sprache besteht aus ca. 100 Wörtern.

Er benennt richtig Haustiere (6), wilde Tiere (5), Transportmittel (4), Lebensmittel (10), Möbelstücke (4), Besteck und Geschirr (4), Familie (5), Spiele (10), Farben (7), Eigenschaften (4). Er benennt und erkennt nach Lauten das Sprachmaterial der ersten zwei Unterteste des Testes „Verbales Verstehen – Sibiu (20).

Er erkennt nach dem Gehör und spricht die seinen Namen, die Namen der Kollegen und der Erzieher/Pädagogen aus.

Er hat die Aussagekraft der Wörter entdeckt, bzw. um etwas zu erreichen/erhalten oder etwas abzulehnen. Er benutzt „nein“, „ich will nicht“, um eine Ablehnung auszudrücken, „ja“, „gut“, um eine Annahme auszudrücken sowie die Wörter „bitte“, „danke“.

Er benutzt die Begrüßungsformeln: „Guten Tag!“, „Tschüs“, „Auf Wiedersehen!“ sowie die Fragen „Was machst Du?“, „Wo?“, „Was?“, „Hast ....?“. Er verlangt mündlich „Gib mir...!“

Er ruft den Namen der Kollegen, Erzieher und anderer Personen, mit denen er häufig in Kontakt tritt. Er benutzt das Pronomen „ich“ und die Adverbien „laut“, „leise“, „schnell“.

Er zählt bis 10.

Er verknüpft verschiedene Adjektive mit Substantiven (wie „grüner Apfel“, „große Puppe“, „kleiner Ball“, „schöne Blume“).

Er kann einen Satz, der aus 2-3-4 Wörtern besteht, richtig bilden

„Ich will Wasser!“, „Draußen regnet es“, „Der Hund macht wau-wau,,  
“Gib mir die kleine, rote Tasse!,,

Er ersetzt die Zeichen der Gesten- und Mimik-Sprache mit erlernten Wörtern nach dem Gehör.

Er äußert eindeutig den Wunsch mit Erwachsenen und Kindern zu kommunizieren. Er leitet Spiele ein, die eine mündliche Komponente beinhalten (spricht am Telefon, ist Lehrer, Verkäufer oder Käufer).

Er erkennt die Bedeutung einiger Verben (lachen, weinen, trinken, essen, schlafen, stehen, gehen, laufen, sehen, nehmen, zerreißen, zerschneiden, waschen, stellen, legen, brennen, hören, schlagen) und bildet Sätze nach Bildern. („Papa schläft“. „Mama trinkt Kaffee“, „Papa schneidet die Torte an“, „Das Mädchen wäscht die Tasse“.

#### Rezeptive Sprache

Er versteht eine große Anzahl von Wörtern (aus dem Themenbereich, das für die Kindergartengruppe, der er angehört, vorgeschlagen wurde,) und einige Handlungen. Er zeigt bekannte Gegenstände, führt einfache Befehle aus („Geh zur Tür!“, „Bringe mir das Bilderbuch!“, „Wasche die Hände!“, bring einen bekannten Gegenstand, der sich nicht im Blickfeld befindet.

Er versteht Zeitadverbien „heute“, „morgen“.

Obwohl er einige Töne verändert oder unvollständig herausbringt, sie verwechselt, spricht er eine große Anzahl von Wörtern so aus, daß sein „Sprechen“ größtenteils von bekannten Personen verstanden wird.

Beide Eltern nehmen am Treffen der Kinder-Eltern-Gruppe teil. Ihr ständiges Bemühen, das Kind zu rehabilitieren, ihre verantwortungsvolle Haltung und starke Motivation haben den Fortschritt des Kindes gesichert.

### **Beispiel 2**

#### **Persönliche Daten:**

Name und Vorname: S.S.

Geburtsdatum: 10.11.1997

Geschlecht: weiblich

**Audiologische Diagnose:** beidseitige schwergradige neuro-sensorielle Hypoakusie

Durchschnittlicher Hörverlust: rechtes Ohr: 101,1 %

linkes Ohr: 100 %

#### **Persönliche Geschichte:**

Eheliches Kind, deren Eltern gesund sind und keine Hörschwierigkeiten haben. Sie ist ein Einzelkind.

Die Schwangerschaft verlief normal und wurde medizinisch unter Kontrolle gehalten. Es gab weder Krankheiten, noch Unfälle während der Schwangerschaft. Die Geburt erfolgte normal und termingerecht.

Im ersten Lebensjahr war das Kind still und schrie kaum. Es war nie von der Mutter getrennt.

Als das Kind 1 ½ Jahre alt war, haben die Eltern festgestellt, daß es nicht auf Töne/Geräusche oder seinen Namen etc. reagiert.

Im Alter von 2 Jahren und 4 Monaten wurde die Hörbeschädigung bestätigt. Es wurde gleich nach der Bestätigung der Hypoakusie mit Hörgeräten versorgt.

Es erhielt am 04.03.2003 ein Cochlea-Implantat (als es 5,4 Jahre alt war).

#### **Bildungserfahrung:**

In der Zeit Mai 1999 bis September 2000 hat es einen normalen Kindergarten besucht.

Seit September 2000 bis Juni 2004 hat es den Sonderkindergarten innerhalb der Sonderschule Nr. 2 mit Internat (für Hörbeschädigte) Sibiu besucht.

Seit September 2004 besucht es den normalen Kindergarten.

#### **Einschätzung des Rehabilitationsprogrammes**

##### **Vor dem Cochlea Implant**

Als er in den Sonderkindergarten kam (2000) kommunizierte es kaum mit den anderen Kindern als auch mit den Erwachsenen, die Kontakte zu den Kollegen waren sporadisch und zufällig.

Nachdem es die Gesten- und Mimiksprache erlernte, hat sich die Kommunikation mit den anderen gebessert, die Gesten, Mimik und Pantomime hat sie den Kindern und Lehrern nahe gebracht.

Bei der Bildung der Kommunikationsfähigkeiten gibt es Schwierigkeiten, häufig lehnt es die Zusammenarbeit ab und ist nicht gewillt, die Aufgaben auszuführen.

##### **Schuljahr 2001/2002**

Sie rafft sich schwer auf, Handlungen/Aufgaben zu unternehmen und muß fortwährend ermutigt und angeregt werden.

Sie akzeptiert nur Beziehungen zu bekannten Personen.

Für die Kommunikation benutzt sie nur die Mimik und Gestensprache.

Sie ist der individuellen Entstummungstätigkeit gegenüber gleichgültig.

##### **Phonematische Aneignungen:**

In der Zeit 2000-2001 entwickelt sich ihre Sprachfähigkeit langsam, so daß sie am Ende des Schuljahres die Phoneme a, o, u und die Konsonanten p, m ausspricht. Sie bindet mit großer Schwierigkeit Phoneme in Silben und Wörter.

##### **Schuljahr 2002/2003**

Es wird eine spektakuläre Änderung im allgemeinen Verhalten des Subjektes und in seiner Haltung zur Bildung von Sprachfähigkeiten festgestellt. Sie erfüllt ihre Aufgaben und wünscht, mündlich zu kommunizieren. In der vorausgehenden Zeit hat sie diese Tätigkeiten abgelehnt oder war ihnen gegenüber gleichgültig. Jetzt besteht der Wunsch dafür.

Sie erfüllt immer ihre Aufgaben.

Sie paßt sich der Kindergruppe leicht an, tritt mit Leichtigkeit von der Führerrolle zur geführten über. Sie wünscht sich sehnlich die Begleitung von Kindern. Sie arbeitet und kommuniziert nur mit bekannten Personen. Sie lehnt die Kontakte mit Fremden ab.

Sie kommuniziert hauptsächlich mit Hilfe der Zeichensprache und der Onomatopöie. Sie bringt veränderte Laute heraus und spricht mit Kopfstimme. Manchmal reagiert sie auf ihren Namen (den sie von den Lippen abliest). Sie gibt und zeigt die verlangten Gegenstände. Sie zeigt, wenn aufgefordert, die Bilder der bekannten Gegenstände. Sie antwortet mit ihrer Stimme, wenn sie angeregt wird.

### **Phonematische Aneignungen**

In der Zeit 2002-2003 besitzt sie fast alle Phoneme (ausgenommen die Phoneme: î, g, r, j). Manchmal verwechselte sie sie, doch stellt sie sie schnell richtig, wenn der Lehrer sie darauf aufmerksam macht und sie es von seinen Lippen abliest..

Wortschatz - expressive Sprache

2001 – 5 Wörter

2002 - 14 Wörter

2003 – 40 Wörter.

Alle Wörter der expressiven Sprache wurden durch klassische Entstummung, aufgrund der Lage der phono-artikulations Organe und Schwingungen angeeignet.

Die rezeptive Sprache ist viel reichhaltiger.

Sie wiederholt eine große Anzahl von Wörtern nach dem Lehrer.

Als sie in den Kindergarten kam, benutzte sie das Resthörvermögen gar nicht. Sie regierte nur auf den Trommelschlag in einer Entfernung von 1 m.

Durch tägliches Training gelang es ihr vor dem CI sonor/lautlich einige Musikinstrumente zu differenzieren: Trommel, Trompete, Claves, Lautspiele. Sie hörte und verstand die menschliche Stimme nicht.

### **Nach dem CI**

Nach dem CI und dem Aktivieren der ersten Elektroden des Prozessors reagierte sie auf laute Töne/Geräusche (Türschlag, Staubsauger, Wecker), auf die Trommel, Trompete, Flugzeug, Auto, Telefon und es gelang ihr, sie lautlich zu unterscheiden. Sie reagierte nicht auf die menschliche Stimme.

Nach der dritten Anpassung reagiert sie auf viele Lautquellen: Trommel, Trompete, Glocke, Triangel, die Onomatopöie verschiedener Tiere: Hund, Katze, Maus, Kuh, Schaf, Pferd, Schwein, Hahn, Ente, Huhn, Elefant, Löwe; auf Töne, die Pkws, Bahn, Flugzeug, Fahrrad, Staubsauger, Uhr, Telefon erzeugen, wobei sie sie nicht sonor unterscheiden kann.

Sie reagiert auf alltägliche Töne/Geräusche: wenn eine Tür zugeschlagen wird, ein Löffel an die Tasse angeschlagen wird, ein Besteck fällt, ein Papier verknittert wird, Wasser in ein Gefäß geschüttet wird. Sie signalisiert dem Erwachsenen diese Töne/Geräusche.

Sie startet einfache Spiele mit einer bestimmten „sprachlautlichen“ Teilnahme: sie versteckt sich hinter der Tür und ruft „bau“ mit dem Wunsch, den Erwachsenen zu erschrecken; verläßt den Klassenraum, klopft an und wartet hinein genötigt zu werden mit „Ja, S...“/„Komm herein, S...“, erwartet mit „guten Tag!“ begrüßt zu werden, antwortet am Telefon mit „Hallo, Mama“, „Komm, Mama“.

Reagiert auf Musik und tanzt.

Stellt den TV lauter oder leiser ein, je nach Sendung, bei der Werbung ist ihr der Ton zu laut.

Reagiert auf Töne/Geräusche, wenn man sie aufmerksam machen will („Was hört man?“)

Reagiert allein auf Schallquellen, signalisiert dem Erwachsenen diese Tatsache und wenn sie diese Tonquelle nicht erkennt, bittet sie den Erwachsenen um Hilfe.

Sie wird aufmerksam, wenn man ein Musikinstrument oder die Musik nicht mehr hört.

Sie erschrickt bei unerwarteten Tönen/Geräuschen (Klingel, Telefon).

Sie bewegt Gegenstände von der Stelle oder schlägt sie an, mit der Absicht Töne/Geräusche zu erzeugen und freut sich, wenn sie sie hört und signalisiert es dem Erwachsenen.

Sie horcht auf Geräusche/Töne, die von draußen kommen: von Transportmitteln, Kirchenglocken, Vogelgezwitscher, Hunde-gebell.

Sie „spielt“ gerne auf Musikinstrumenten, gibt Rhythmen wieder, die der Lehrer eingibt, schafft selber langsame oder schnelle Rhythmen, gibt leise-laute Töne wieder, schafft selber, auf Wunsch des Lehrers leise-laute Töne.

Sie befolgt einfache Anleitungen: „Komm!“, „Schweig!“, „Setz dich!“.

Reagiert auf die menschliche Stimme, hört, was man ihr sagt, versteht es aber nicht.

Erkennt, wenn nur ihr Name an stillen oder an lauten Stellen genannt wird, sowie einige sehr häufig benutzte Wörter wie: Ei, Wasser, Trommel, Mama, Mädchen.

Nach ca. 6 Monaten nach dem Aktivieren befindet sich die Hörschwelle bei normalen Grenzen (30dB).

### **Ergebnisse letzter Einschätzungen (Mai 2005)**

Es gelingt ihr alle Aufgaben des Programmes zu lösen: „Detektiv Langohr“, „Hör mal“, „Förderspiele Hörspaß“: Töne/Geräusche zu identifizieren und diskriminieren, Töne/Geräusche den Bildern, derer sie angehören, zuzuordnen, Töne/Geräusche nach ihren Qualitäten zu differenzieren, Übungen für das Hörgedächtnis, Pausen festzulegen.

Für den Hör-Sprechtraining wurden die Bilder des Satzes Schubi Foto Didac benutzt. Sie versteht einfache und erweiterte Satzgefüge, bildet Sätze aus zwei, drei Wörtern, setzt die Wörter an die richtige Stelle, benutzt und versteht einige Verben, Präpositionen („auf“, „unter“, „in“), räumliche Verhältnisse („oben“, „unten“), Adverbien („hier“, „dort“) richtig. Erkennt und gibt Onomatopöie, Wörter, Syntagmen wieder.

Für die Bildung und Entwicklung der Kommunikationsfähigkeiten und die Anregung der Kommunikation wurden verschiedene Themen und Geschichten ausgewählt. Es wurde der dem Thema entsprechender Wortschatz, kurzer Dialog, im allgemeinen eine normale Kommunikation verfolgt.

### **Umfang des Wortschatzes**

Die expressive Sprache besteht aus ca. 200 Wörtern, wobei die rezeptive Sprache viel umfangreicher ist.

Sie versteht nach Gehör einen bedeutenden Teil der mündlichen Sprache.

Sie nennt richtig Namen betreffend Familie, Haustiere, wilde Tiere, ihre Umwelt, Transportmittel und ihre Routen, Kleidungsstücke, Möbelstücke, Besteck und Geschirr, Farben usw. Sie erkennt sie nach Gehör (liest nur noch selten von den Lippen ab), bildet Satzgefüge. Führt Dialoge nach Familienthemen. Kommuniziert mündlich mit bekannten Personen: Lehrer, Erzieherinnen, Hörgeschädigtenpädagogen, Eltern und Kinder aus der Gruppe.

Sie schreibt einfache Wörter nach Diktat. Sie zählt bis 10. Sie kennt und spricht die Namen der Kollegen, Erzieherinnen und Freunde aus.

Sie spricht in einfachen Sätzen. Sie tätigt kleine Einkäufe, sie drückt ihre Wünsche mündlich aus, sie liest nach den Bildern der Märchenbücher, erzählt Märchen (mit Hilfe von Fragen) in einer vereinfachten Form.

Sie hört sehr gerne Musik (wünscht ausdrücklich, Musik zu hören), schlägt den Takt und tanzt. Die rhythmischen Tätigkeiten erfreuen sie besonders und wünscht sich häufig in den Rhythmik- Saal zu gehen.

Im allgemeinen, verstehen die Personen aus ihrer Umgebung ihr Sprechen, obwohl sie Wörter aus mehreren Silben kürzt und stimmhafte mit stimmlosen Phonemen nicht unterscheidet („l“, „n“).

Im Vorjahr, in den Sommerferien, als der Sonderkindergarten geschlossen war, besuchte sie den normalen Kindergarten. Sie hat sich in das Kollektiv integriert, hatte aber Kommunikationsschwierigkeiten, so daß die Sprechtherapie auch während der Ferien fortsetzte (im Kindergarten mit dem Lehrer für Defektologie und zu Hause mit der Mutter, auf Rat der Lehrerin).

Die Mutter nimmt aktiv am Treffen der Kinder-Eltern-Gruppe teil, ihr Interesse an der Rehabilitierung, an der Fortsetzung der Tätigkeit zu Hause wird in der Entwicklung des Kindes widerspiegelt. Die Eltern haben eingesehen, daß für eine normale Entwicklung ein normales Leben geführt werden soll. Zu Hause wird sie ständig verbal stimuliert, ermutigt am Telefon zu antworten und zu telefonieren. Sie hat guthörende Freunde, mit denen sie einen Teil ihrer Freizeit verbringt (geht Schwimmen, fährt Fahrrad).

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## **SUPRASEGMENTAL MORPHEMES RECEPTION IN ROMANIAN LANGUAGE**

**CAROLINA HAȚEGAN**

**ZUSAMMENFASSUNG.** Der Artikel mit der Überschrift „Empfang der morfologischen Elemente in rumanischer Sprache“ ist am Rande einer Recherche, in welche die Eigenartigkeit des Empfangs der morfologischen Elemente, im Rahmen der Gultigkeit, der leichten geistigen Behinderung, der moderaten geistigen Behinderung, des Hormangels und der Lernschwierigkeiten, in rumanischer Sprache merklich. Das verwendete sprachliche Material ist in einer Probe des Empfangs der morfologischen Kategorien in rumanischer Sprache enthalten. Das Ganze der Variablen, die ausschliesslich auf die Bemessung der Kompetenzen des Empfangs der morfologischen Elemente hinweist, ist auf der Grundlage der lexikalisch-grammatikalischen Konstruktionen entwickelt, welche die Omonyme nutzen (als sprachliches Mittel zur Verwirklichung der morfologischen Elemente in rumanischer Sprache). Die Frequenzen der richtigen Antworten der Teilnehmer der Forschung wurden berechnet, sowie die statistische Bedeutung der Unterschiede in welcher Kennzeichen zwischen den Arten am Niveau des Empfangs der morfologischen Variablen im Kontext der Kennzeichen der rumanischen Sprache, ermittelt wurden. Die Ergebnisse sind aus statistischer Sicht bedeutsam.

**Stichworte:** das morfologische Element eines Teilabschnittes, die Fahigkeit zu verstehen, Omonyme, die Fahigkeit zu empfangen

**ABSTRACT.** The article entitled “Suprasegmental Morphemes reception in Romanian Language“ is based on a research through which the features of suparsegmental morphemes reception are underlined in validity context, in the situation of low and moderate mental disabilities, in the situation of hearing impairments and learning difficulties. The linguistic material used is included in a task for assessing morphologic categories reception in Romanian, the block of variables that exclusively focuses on assessing suprasegmental morphemes reception being elaborated based on certain lexical-grammatical constructions that valorized homographs (as linguistic mean for concretizing suprasegmental morphemes in Romanian). Participants` in the research correct answers frequencies were calculated, as well the statistic significance of the differences through which intra-categorical features at the level of reception suprasegmental morphemes variables are emphasized, having into consideration Romanian language particularities, these results being significant from a statistical point of view.

**Keywords:** segmental morphemes, suparsegmental morphemes, comprehension, homographs, reception abilities.

### 1. Morphologic side of the linguistic system. Theoretical approach

Morpheme is the structural and functional unit defining morphologic language side, being the smallest unit carrying meaning as analyzing the structure of a word. This is the smallest unit characterized from two perspectives, from the expression and the content perspective (Stan, 1996).

As linguistic system structure is an integrating and integrated one, simple units are integrated and are part of the complex one, thus regarding to the relation between morphemes and other units that characterize linguistic system, can be underline the connection with phonemes, but also with lexemes. Morphemes are compose from phonemes, they integrating phonemics units and are integrated by lexemes that are more complex units. On the contrary, phonemes are units characterized from a single perspective, from expression perspective, being simpler units comparing them with morphemes, but also with lexemes.

Identifying the morphemic structure of a certain word has a great importance in order to configure linguistic system morphologic side, in order to differentiate between morphologic categories. Thus, morphologic analyze has an important value from an historical perspective regarding language, ensuring the way language is developed from a diachronic point of view.

#### 1.1. Morphemes classification

A criterion according to which morphemes are classified is the nature of the phonologic element that represents the expression side of the morpheme. Morphemes are from this point of view *segmental* ones, they being represented through segmental phonemes (for instance in the Romanian word “casa”- the house, the second “a” is a segmental morpheme, the word being decomposed in “cas-“and “-a”, first unit being the root of the word and the second one being the segmental morphemic unit) and *suprasegmental morphemes*, they being represented from the expression pint of view through suprasegmental phonemes (stress and intonation).

Although intonation can't be put into practice but associated with a segmental sequence, it can be a means of expression of a content unit, and it can represent a morpheme by itself. Stress, is part of a morphemic structure, it being often associated with one or more other segmental units. Thus, in Romanian flexion can be registered the morpheme „-ă” („cânt/ă”- sing, a verb at present simple, indicative) and the morpheme „-ă” („cânt/ă”- the same verb to sing but in a kind of present perfect time, indicative). The morpheme from the present perfect structure is composed from the segmental phoneme „-ă” and stress, the suprasegmental component, as „-ă” from present simple, indicative is reduced to the segmental phoneme „-ă”, being opposed and differentiating from the morpheme of present perfect by the fact that stress is missing. The suprasegmental differentiation solves in this way, the homonymy between the two morphemic structures (Bejan, 2001).

Stress has a role by itself in vocative and imperative structures: vocative being often identical as phonemic structure with the nominative, and imperative with present indicative. In these situations, the stress intensity differentiates

between the two forms– „Ioána”- Joanna (nominative) and „Ioana!”-Joanna (vocative) or „șezi”-sit (indicative) and „șezi!”-sit (imperative). The presence of a more intense stress differentiates between vocative - nominative and imperative – present indicative. The growth of intensity is always associated with the tone rising, thus a change of intonation pattern (Guțu, 1967, 2007).

## **2 The block of suprasegmental morphemes in the task for assessing the reception abilities of morphemic categories**

Having into consideration these theoretic aspects, the presence of these aspects within a task through which the receptive and comprehension abilities regarding morphologic categories specific to Romanian Language are assessed is absolutely necessary. The complexity of this problem and the novelty of introducing them in a psycholinguistic approach implies increasing the number of the items included in the task, at the level of this block of variables to twelve, comparing with the number of items at the level of other morphemic blocks included in the probe for assessing reception abilities of the morphologic categories.

In the context of this block of variables are followed the following pairs of homographs:

- strópi – drops (noun)/stropí- to water (verb);
- álbi – white in plural (adjective)/ albí – to paint in white (verb);
- clása – class (noun)/clasá - to classify (verb);
- patina - skate (noun)/patiná – to skate(verb);
- adrésa – address (noun)/adresá – to address to somebody (verb);
- véselă – happy (adjective)/ vesélă- dishes (noun);
- mása – table (noun)/ masá- to make a massage (verb);
- gáră – train station (noun)/gará- to park the car in garage (verb).

The approach in this contrastive manner is one that implies a high level of difficulty as it is restricted to the lexical level and it focuses only on lexical contents. In this way, the proposed perspective through the assessment tool is one that values and details the lexical aspects of the language in propositional plan. Thus, it is facilitated the approach of the polisemantic lexical contents of the words from the homographs pairs: „clasa”- the class- in educational level; „clasa”- class- as a train compartment, „a clasa”- to classify –the verb with the meaning of categorizing).

At the level of this morphemic block items insure the morphemes, and lexical items contextualization, the children’s task being the one to prove the comprehension of the presented contents by identifying the correspondent images among four different images.

Suprasegmental morphemes aspect can be investigated through the items that assess the reception and the comprehension of imperative mood, but it is located in the block of morphemes that express this type of verbal mood.

The target items are:

Items
1. Fata stropi florile. (The girl watered the flowers.)
2. Băiatul albi gardul. (The boy painted in white the fence.)
3. Mașina patina la deal. (The car slipped while going up on the hill).
4. Mama masa o fată. (Mother made a massage to a girl.)
5. Mama gară mașina în curte. (Mother parked the car in the yard.)
6. Trenul sosește în gară. (The train arrives in the train station.)
7. Mama clasa borcanele în cămară. (Mother classified the jars in the store room.)
8. Fata clasa cuburile roșii de celelalte. (The girl classified the red cubes from the others.)
9. Fata se adresa mamei. (The girl addresses to her mother.)
10. Adresa este notată pe plic. (The address is written on the envelope.)
11. Băiatul cară vesela. (The boy carries the dishes).
12. Fata veselă citește o carte. (The happy girl reads a book.)

Through introducing in the assessing tool the block of variables that focuses on suprasegmental morphemes is underlined the powerful relation between language morphologic side and the lexical language side, but also with the phonologic one (as long as the morphemic suprasegmentals are expresses through phonemic suprasegmentals, this relation being insured by the propositional situation, one that has pragmatic, contextual value, being emphasized the structuralism based, systemic perspective on language and communication.

### 3. Research description

#### 3.1. Objectives

In order to assess the way in which the different components of morphologic competence configure at the level of verbal language, on receptive dimension, in Romanian Language, both in valid children and in the case of the children with disabilities and those with learning difficulties was developed a research whose *objectives* are:

1. Underlying the features of the way in which the abilities of suprasegmental morphemes reception are structured, at receptive level, in the case of the children with disabilities (low mental deficiency, moderate mental

deficiency, hearing impairment) and in the case of the children with learning difficulties (dyslexia, dyslexia-dysgraphia) included in the grads I-IV.

2. Underlining the features of suprasegmental morphemes reception in the case of the valid children included in the first grade.

### *3.2 Participants in the research:*

Criterion on which the participants` selection was developed:

a. chronologic age (the participants` chronologic age is 6-11 years old, corresponding to the schooling area I-IV grades. The arguments that lead to the establishing of this age interval are identifiable in more studies and researches. Among these can be mentioned those developed by Berko (1958) and Selby (1972). Those two researchers underlined the fact that flexional rules are acquired by valid children with ages between 7-11 years old, their researches excluding the contribution of the lexical content by focusing on the flexion of the pseudo-words. Also, the research through which the homonym English test TROG was standardized underlined the fact that their participants at the research, having 6,7 years succeeded in correctly answering in half of the items of the test (in ten from those twenty blocks of items included in the test), while those being 11 years old or being over this age succeeded in offering correct answers for all those twenty blocks of items included in the test. Starting from these researches, as well as from the researches developed by Nagy (1993), Carlise (1995), Leong (1989), Elbro (1989), Rubin (1979), it was underlined the fact that the development of the morphologic competence is dependent on historical language features, on the schooling period (especially the first years when reading- writing abilities are acquired), on phonologic awareness and on phonemic hearing. In these conditions the criterion of the age of 6-11 years is one due to direction the research that we intend to develop towards particularizing the acquisition and the assessment of morphologic competence in Romanian language, in the case of the children with disabilities (mental impairments and hearing impairments) in the case of those with learning difficulties and of the valid ones. From the whole aspects that morphologic competence is, in Romanian language, this research underlines only the features of the morphologic abilities concerning suprasegmental morphemes.

b) the participant`s in the research diagnose

The participants included in the research were also selected according to the diagnose criterion. Thus, in this research are included children with: low mental disabilities, moderate mental disabilities, children with severe/profound congenital hearing impairments and children with learning disabilities. There wasn`t a unitary way of diagnosing these children included in the research, other than the one of their diagnose according to which they are included in the schools from where they come. It was made an attempt to control this aspect by selecting only those children that the special education teachers who work with them recommend to be part of the participants from these research, confirming the diagnose. These aspects can be considered as limits of the research.

The selection of a group of valid children with the age of 6-7 years old (included in the first grade) is aimed to facilitate the configuration of an assessment and screening tool for learning difficulties, being taken into consideration the fact that the majority of the researches underline the strong connection between language morphologic component and the acquisition of reading-writing abilities.

### 3.3. Participations` diagnose- description

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Valid	70	34.3	34.3	34.3
Low mental disabilities	52	25.5	25.5	59.8
Moderate mental disabilities	15	7.4	7.4	67.2
Learning difficulties	60	29.4	29.4	96.6
Hearing impairments	7	3.4	3.4	100.0
Total	204	100.0	100.0	

### 3.4. Participations` schooling level – details

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid First grade	92	45.1	45.1	45.1
Second grade	44	21.6	21.6	66.7
Third grade	37	18.1	18.1	84.8
Fourth grade	31	15.2	15.2	100.0
Total	204	100.0	100.0	

### 3.5 Research methods:

- the task for assessing the reception abilities concerning morphologic categories in Romanian Language (PRCM), task adapted after the TROG test (Test for Reception of Grammar) (Bishop, D.; Bright, P.; James, C.; Bishop, S; Van Der Lely, H., 2000).

It was calculated the frequencies difference as the subjects` number from every diagnose category is different. Despite the subjects` number, at the level of the suprasegmental morphemes variables block, can be registered differences among the subject` answers having into consideration the diagnose category they are included in. These differences are statistic significant, in  $p < 0.1$ . This aspect infirm the null hypothesis ( $H_0$ ) through which any registered difference is due to the chance, not to a certain factor.

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The difference significance was calculated by using Pearson, the Likelihood Ratio Chi Square and Linear-by-Linear Association methods, but the values are similar, the statistic significance is the same, aspect that explains why while interpreting the results only those obtained by Pearson's method is referred to.

Calculating the frequencies of the given answers at global level, for the participants in the research categories allows to present the features and the specific of how morphologic abilities at the level of suprasegmental morphemes in Romanian language are structure in the case of valid children, of mentally disabled, hearing impaired children as well as in the case of the children with learning difficulties. This aspect is required by analyzing the researches from abroad, in this field, researches that are not developed on Romanian population, and by underlining, in this why, the fact that by generalizing their findings on Romanian population is not enough.

*3.6 Discussions and interpretations of the obtained results*

The frequency of the participants' correct answers, at the level of the subscale through which the suprasegmental morphemic category is assessed, is presented in the following table:

		Suprasegmental morphemes												Total
		1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	
The subjects' diagnose	valid	0	0	0	0	0	0	2	11	27	15	1	14	70
	Low mental disability	0	0	0	1	0	2	6	13	20	7	3	0	52
	Moderate mental disability	0	0	0	2	1	2	5	3	2	0	0	0	15
	Learning difficulties	0	0	0	0	0	0	3	14	12	13	11	7	60
	Hearing impairment	1	1	3	2	0	0	0	0	0	0	0	0	7
Total		1	1	3	5	1	4	16	41	61	35	15	21	204

Within this subscale were included twelve items, nine include the homograph that reveals the morphemic value of the stress, while the other three underline the pair of the homograph in which the value of the stress is revealed. Thus, the answers to this subscale are to be qualitatively analyzed, this type of analyze offering more clear results about the children's abilities to discriminate. According to it the most frequent errors are registered in the cases of the following verbs: „a stropi-to water”, „a albi-to paint in white”, „a gara-to park”, „a clasa-to classify” and in the case of the noun „veselă-dishes” and of the adjective “vessel-happy”.

Both from a quantitative and qualitative point of view, is important to underline the fact that the children's errors are not registered at the level of those three items with obvious lexical content, but in the case of the other nine items, the

suprasegmental morphemic aspect being the problem. The number of the correct answers for all those twelve items is reduced having into consideration the whole subscale, in the case of all the participants in the research. Thus, just 20% among the valid participants in the research offered correct answers for all those twelve items of the subscale, most of them 38,57% offering correct answers for just nine items. The children with learning difficulties offered, in proportion of 12% correct answers for all those twelve items of the subscale, while 23,33% among these offered eight correct answers, 20% nine correct answers and 21,66% ten correct answers. Between these two categories of participants in the research, through the frequencies analyze are indicated differences, remaining that these differences to be statistically expressed. These types of results can't be reported to anterior performances obtained by children, in Romanian literature, but neither in foreign one, as the morphemic value of the stress is not to be identified in all the foreign language cases, and in English literature is not to be found.

The children with low mental disability obtained an inferior performance comparing to the other two groups of participants in the research, none of them succeeding in correctly answering to all the items included in the subscale, most of them offering (38,46%) correct answers, for nine items, among those twelve of the subscale.

In the case of the children with moderate mental disability the registered performance is even a lowered one, five from those fifteen participants in the research (33,33%) offering correct answers for seven items of the subscale. Despite the indicated low level, it can be underlined the fact that the moderate mentally disabled children obtained better results in this task, by comparison with the hearing impaired ones. In the case of the hearing impaired children can be emphasize the fact that none of them succeeded in correctly answering to more than four items of the subscale, and the correct answers are given mostly for those three answers that do not include explicitly the suprasegmental morpheme. In what these results are concerned, an explanation can be that in sign language these morphemes are more difficult expressed. Thus, the limits of the sign language interpretation of the items included in this task turn into aspects that clarify the fact that the hearing impaired children obtained the poorest results in the case of this block of variables, even poorest than the moderate mentally disabled children.

It is important to be underlined the fact that in the case of the categories of participants from this research, with the exception of the hearing impaired children, were not obtained frequencies of correct answers in fewer items than four, aspect that emphasizes this block of morphemes is an important, easy to analyze and to be acquired, in a certain degree, by the categories of participants in the research, despite the fact that this morphologic aspect is not to be identified within the textbooks but seldom, and from the curriculum of Romanian language and literature or from the curriculum of speech therapy it completely missing. This aspect is also strengthened through the correlations with the other categories of morphemic variables included in the probe, in order to assess children's receptive abilities regarding morphemes in Romanian language.

The differences of the frequencies above analyzed are statistically significant, aspect that underlines that the different aspects concerning the acquisition of this morphologic category within the participants in the research. The differences are highly significant ( $p < 0.1$ ) aspect that can be observed by analyzing the value of Chi square in the following table:

#### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	259.768(a)	44	.000
Likelihood Ratio	138.183	44	.000
Linear-by-Linear Association	11.667	1	.001
N of Valid Cases	204		

a 46 cells (76.7%) have expected count less than 5. The minimum expected count is .03.

#### 4. Conclusions:

This research is one of the first researches developed on Romanian population on this subject, that of the suprasegmental morphemes. The obtained results are meant to underline the fact that despite the fact that participants in the research have different ages, the most important factor that differentiates between them is their diagnose. Even if these kinds of comparisons are not very informative it is important as through this research is meant to be identified different acquisition levels regarding the various components of morphologic competence.

Suprasegmental morphemes are of a great importance in language therapy field in order to train children`s phonological awareness as well as their lexical acquisitions with pragmatic value. This aspect has a lot to deal with the reading-writing acquisition it, besides other components of morphologic awareness, delivering information about children`s learning difficulties. Thus, this morphologic aspect can be developed within a test for screening, identifying and stimulating the acquisitions in the writing/reading area.

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## PHONOLOGICAL AND VISUAL PROCESSING SKILLS IN CHILDREN WITH INTELLECTUAL DISABILITIES AND READING DIFFICULTIES

CARMEN BODEA

**ABSTRACT.** Considering the high frequency of reading and writing difficulties among children with intellectual disabilities, as well as the difficulties encountered by them in literacy, we set up to investigate the role of phonological awareness and visual processing skills in the complex mechanism of word decoding. The fundamental question of our study is whether the same mechanisms responsible for the complex symptomatic aspects of dyslexia are present in intellectual disability. The results indicate that phonological awareness skills and spatial orientation skills can discriminate between readers and non-readers with intellectual disabilities.

**Keywords:** intellectual disability, phonological awareness, visual processing, reading.

**ZUSAMMENFASSUNG.** Nach der Feststellung der wachsenden Frequenz der Lese- und Schreibstörung in den Reihen der Kinder mit geistlicher Störung, sowie die Schwierigkeiten die sie im Lernen des Lesens und Schreibens erfahren, haben wir uns vorgeschlagen die Rolle des phonologischen Bewusstseins und der visuellen Verarbeitungen im komplexen Mechanismus der Dekodifizierung des Wortes zu untersuchen. Die Grundfrage des Studiums ist, wenn auch in der Bedingung der geistlichen Störung dieselben Mechanismen zuständig für das komplexe symptomatologische Bild der Dislexien sind. Nach der Analyse der Ergebnisse haben wir festgestellt, dass das, was den Unterschied zwischen den Lesern und den Nichtlesern mit geistlicher Störung macht, die Fähigkeit des phonologischen Bewusstseins und der räumlichen Orientierung ist.

**Stichworte:** geistliche Störung, phonologisches Bewusstsein, visuelle Verarbeitung, das Lesen

Considering the high prevalence of dyslexia among children with intellectual disabilities in special schools, and observing the difficulties they encounter in the literacy process, many researchers have focused on this topic, putting an emphasis on developmental and remedial approaches to literacy.

An overview of the frequency of reading difficulties in children with intellectual disabilities enrolled in a special school was obtained previously. The frequencies are reported in table 1, as it follows:

**Table 1**

Grade	Total number of students assessed for reading	Total number of students displaying reading difficulties	Percentage
I- IV	120	40	33%
V-VIII	85	30	35%

The data presented above indicates a high frequency of reading difficulties in children with intellectual disabilities. This data was drawn from the initial and interim curriculum- based evaluations of Romanian language teachers in the school. We only considered the cases displaying reading difficulties such as illiteracy or reading at letter/ syllable level. Considering that the frequency of reading disabilities in normal school population is somewhere around 6-7%, our data indicates a concerning high incidence of such problems among the students of the special school.

In a longitudinal study conducted by Rosca & Cotutiu on the psychological aspects implicated in literacy, in the case of children with intellectual disabilities, they used observational methods to identify the difficulties encountered by the students in the process of learning to read, as well as the effects of various remedial methods addressing these difficulties. Three main categories of problems were identified: difficulties in making the synthesis of letters into words, difficulties related to the particularities of the analysis operation, and difficulties related to perceived failure in reading tasks with loss of interest.

In a study by Burlea (2007), children with intellectual disabilities were compared to normal children on symptoms of dyslexia and dysgraphia. The children were administered 5 reading and writing tasks and their performance was coded on an assessment checklist. The tasks were selected to indicate various types of reading and writing errors, such as: omissions, insertions, substitutions, confusions among letters and/or words, fluency problems in reading and writing, difficulties in matching the phoneme to the grapheme, difficulties in understanding the semantics attributed to a graphic symbol, difficulties in following calligraphic and grammar rules, difficulties in syllable segmentation, difficulties in using the page writing space, not respecting the lines on the writing space, joining or comprising words. The comparisons between the two groups included in the study, showed no significant difference. Thus, children with intellectual disabilities and dyslexic difficulties display the same error pattern as dyslexic children with intact intellect. The results of the study indicated also a higher

frequency of reading difficulties in children with intellectual disabilities compared to normal children. Also, by comparing the frequencies of errors at the beginning of the school year and at the end of the first semester, Burlea analyzed the effect of speech-language therapy in the case of children with intellectual disabilities. The result indicates that the types of identified errors last for longer periods of time and are much more resistant to remediation actions (Burlea, 2007).

Therefore, the symptoms of dyslexia are present in the case of children with intellectual disabilities, but the diagnostic criteria exclude the cases of low intellectual functioning. The role that the phonological awareness plays in literacy was validated empirically and through research. Phonological awareness is of greater importance in learning to read than IQ, verbal comprehension, and reading prerequisites (Stanovich, 1994; Lyon, 1995; apud Richards, 1999). Phonological awareness represents the fundament for graphic alphabetic systems and seems to be a reliable predictor of reading skills. Adams (1990), Share & Stanovich (1995) (apud Richards, 1999) argued that phonological awareness makes the clear cut between good readers and poor readers.

On the other hand, visual processing in word decoding deals with the visual features of the whole word and of its constituents. Perceptual analysis and synthesis are involved in this process. Or, in children with intellectual disabilities visual analysis and synthesis are def phonological processing impaired, resulting in nonspecific representations and confusions in word recognition.

Connors et colab. (2001) analyzed possible differences in the performance of students with intellectual disabilities (with and without reading difficulties) in phonological tasks. The two groups were compared on several measures: general intelligence, verbal skills, phonological awareness, and phonological memory. The results indicate that children with intellectual disabilities and intact reading skills obtained higher scores in verbal skills, phonological awareness, phonological memory tasks, but not on general intelligence tests. When they eliminated age variable, the students with reading difficulties scored significantly lower in tasks of rehearsal in phonological memory and close to significance in phonological awareness tasks. When intellectual abilities are limited, rehearsal in phonological memory seemed to be critical for learning to read. Its importance to reading seemed to exceed intelligence, verbal skills, and phonological awareness role. The poor results in the case of phonological awareness may be due, in part to a poor selection of the phonological awareness task, which did not require a phonological output. Or, in the case of cognitive disabilities, research indicates that a low performance in word recognition may be due to a combination between poor phonological representations and a poor phonological output.

In her study Farkas (1964) obtained a poorer performance of children with intellectual disabilities in reading non-words, than words, and explained the findings by the fact that non-word reading involves analysis and synthesis operations at a greater extent. The synthesis of non- words seems to be a good indicator of the functionality of phonological memory.

Cossu et al. (Kzoung Sun & Kemp, 2006) compared a group of children with Down syndrome to reading level matched group of children with normal intellectual functioning, on phonological processing skills. Phonological processing tasks included: counting phonemes in a word, phonemic deletion, phonemic analysis and synthesis. The Down syndrome group scored lower on these measures. The results were explained by a lack of direct correlation between acquisition of reading and phonological abilities. Critics to the article argued that the low performance on phonological tasks might be due to the difficulty of the phonemic deletion task.

## **HYPOTHESIS AND OBJECTIVES**

### **Objectives**

- Emphasizing the importance of phonological awareness and visual processing for reading acquisition
- Analyzing the type of phonological and visual processing affected in the context of cognitive disabilities associated with specific reading difficulties.
- Analyzing the cognitive abilities which mark the differences in decoding written words in children with cognitive disabilities.

### **Research hypothesis**

#### **Working hypothesis**

1. Children with cognitive disabilities and reading difficulties will have lower performance in visual processing tasks, than children with cognitive disabilities but without reading difficulties
2. Children with cognitive disabilities and reading difficulties will have lower performance in phonological processing tasks, than children with cognitive disabilities but without reading difficulties

### **Research design**

We will use an inter-subjects experimental design. The research design will consist in using a mixed experimental plan where the relation between classifying variable and the dependent variable is not a causal one but one of covariance. Because the subjects were distributed in two groups based on a classifying variable, in this case – the presence and the absence of reading difficulties in case of a mental deficiency- we cannot establish the existence of a causal relationship between the independent variable (classifying) and the dependent variable.

In this situation the dependent variables will be:

- Phonological processing operationalized by the scores at phonological awareness task

- Visual processing operationalized by the scores at the following sub-scales: shape-content, shape constancy, spatial orientation

### **Participants**

The subjects included in this research were the students of the Special School – C.R.D.E.I.I, enrolled in 2007-2008 school year, and diagnosed with mild mental retardation ( N= 18)

### **Selection**

A number of 9 subjects with mental retardation without reading difficulties and 9 subjects with mental retardation and reading difficulties were selected. We also took into consideration the mean age of the subjects (m= 12) and the degree of mental retardation (mild). In order to eliminate the effect of cognitive deficit upon lexical processing, we chose to include the subjects with mild mental retardation (IQ between 50-69). The distribution of the subjects into the two groups (with and without reading difficulties) was done based on the results at initial evaluation conducted by the special education teacher.

### **Research instruments**

In order to obtain the necessary data to test the hypothesis we used the following instruments:

- Frostig – in order to evaluate visual perceptual and motor function
- Phonological awareness test – based on Phonological conscience task; source: Reeduction orthophonique no. 197/1999; secondary source: “Instruments, tasks and tests for educational evaluation of children with disabilities”
- Teaches made tasks for evaluation of reading and writing

### **Research procedure**

The subjects will be evaluated with the instruments mentioned above and the results were analyzed from a statistical point of view, according to the procedure described before.

The procedure was as follow:

- a. From FROSTIG subscales were selected 3 of them, which evaluate different aspects of visual processing involved in reading (shape- content, shape constancy, spatial orientation).
- b. Phonological awareness task - source: Reeduction orthophonique no. 197/1999; secondary source: “Instruments, tasks and tests for educational evaluation of children with disabilities”

## Results

### Data analysis

The students were evaluated as described above, the results being analyzed from a quantitative and qualitative point of view. Considering the characteristics of the experimental design and the subjects included in this study, statistical analysis will be done using a non- parametrical method, namely Mann – Whitney method. We will compare the raw scores between the two categories, scores from the 3 Frostig subscales, general score at Phonological conscience task.

Below are the raw scores of the two groups:

Group DD	Phonological conscience	Figure-ground	Shape constancy	Spatial orientation
S1	24.5	2	11	4
S2	39	12	10	5
S3	27.5	19	10	5
S4	22	20	6	4
S5	29.5	12	5	5
S6	30	19	5	5
S7	22	20	7	6
S8	41.5	20	7	6
S9	29.5	15	6	5
<b>Group DC</b>				
S10	50	14	5	7
S11	51	2	4	5
S12	48.5	13	9	7
S13	45.5	17	3	7
S14	45.5	11	6	4
S15	27.5	18	6	4
S16	50.5	20	5	8
S17	46	19	2	7
S18	39.5	12	7	7

## Results

To analyze the data we used a non- parametrical method, the Mann Whitney statistical method for independent groups.

We had the following results:

1. Phonological awareness

PHONOLOGICAL AND VISUAL PROCESSING SKILLS IN CHILDREN...

The results obtain by analyzing the raw data by Mann Whitney test don not sustain the null hypothesis, which mean that we have significant differences between the two groups at this task ( $p < .001$ )

	GRUP	N	Mean Rank	Sum of Ranks
CONFON	1.00	9	5.72	51.50
	2.00	9	13.28	119.50
	Total	18		

	CONFON
Mann-Whitney U	6.500
Wilcoxon W	51.500
Z	-3.008
Asymp. Sig. (2-tailed)	.003
Exact Sig. [2*(1-tailed Sig.)]	.001

2. Figure- ground discrimination subtest

The statistical processing of the differences between the two samples doesn't infirm the null hypothesis, so the distinctions between the two groups are not significant. ( $p < 0.730$ )

	GRUP	N	Mean Rank	Sum of Ranks
FORMFOND	1.00	9	9.00	81.00
	2.00	9	10.00	90.00
	Total	18		

	FORMFOND
Mann-Whitney U	36.000
Wilcoxon W	81.000
Z	-.399
Asymp. Sig. (2-tailed)	.690
Exact Sig. [2*(1-tailed Sig.)]	.730

test statistics

3. Constancy of shape

The statistical processing of the differences between the two samples doesn't refute the null hypothesis, so the distinctions between the two groups are not significant. ( $p < 0.796$ ).

	GRUP	N	Mean Rank	Sum of Ranks
CONSTFOR	1.00	9	9.89	89.00
	2.00	9	9.11	82.00
	Total	18		
		CONSTFOR		
	Mann-Whitney U		37.000	
	Wilcoxon W		82.000	
	Z		-.315	
	Asymp. Sig. (2-tailed)		.753	
	Exact Sig. [2*(1-tailed Sig.)]		.796	

Test Statistics

- a Not corrected for ties.
- b Grouping Variable: GRUP

4. The spatial orientation

The statistical processing of the differences between the two samples contradicts the null hypothesis, so we have significant differences between the performances of the two groups at the significant threshold ( $p < 0.019$ ).

	GRUP	N	Mean Rank	Sum of Ranks
ORSPAT	1.00	9	6.61	59.50
	2.00	9	12.39	111.50
	Total	18		
		ORSPAT		
	Mann-Whitney U		14.500	
	Wilcoxon W		59.500	
	Z		-2.340	
	Asymp. Sig. (2-tailed)		.019	
	Exact Sig. [2*(1-tailed Sig.)]		.019	

Test Statistics

- a Not corrected for ties.
- b Grouping Variable: GRUP

### **The Qualitative Interpretation of the Results**

After the qualitative analysis of the subjects' performance at the three tests of processing the visual stimuli, significant differences were found between the two groups at the spatial orientation test. All cognitive disabled children with reading difficulties got lower scores at this item than cognitive disabled children without reading difficulties. Moreover, all cognitive disabled children with reading difficulties scored the lowest at the spatial orientation of the complex shapes. Based on this, we cannot totally validate the hypothesis no. 1 (because significant differences were only present at one of three tasks). Therefore we cannot say that when it comes to the visual processing of the stimuli, the mentally disabled subjects with reading difficulties score lower than those who don't have reading difficulties. However, taking into account the significant differences observed at the spatial orientation subscale, we can say that performances at this task covariate with the reading difficulties in subjects with cognitive disabilities.

From the qualitative analysis of the results obtained by the subjects in the Phonological Awareness test, we see that all subjects with good reading skills scored higher than those who didn't acquire any reading skills. The significant differences obtained allow us to contradict the null hypothesis and therefore confirm the work hypothesis no. 2 which is that cognitive disabled children with reading difficulties will perform worse at the phonological processing tasks than cognitive disabled children with no reading difficulties. That is to say the performance at the Phonological Awareness test can be considered a discriminating factor between children with reading difficulties and those who don't have them, when both of them present a cognitive deficit.

The findings indicate the implications of phonological awareness for reading. Its importance for practice is extremely valuable, as teachers can make a choice between the global method of teaching and the phonetic method.

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## THE CHARACTERISTICS OF SCHOOL VIOLENCE IN URBAN AND RURAL AREA

ADRIAN ROȘAN

**ZUSAMMENFASSUNG.** Diese Studie bewertet die Hauptmerkmale der Gewalt in Schulen aus dem städtlichen und landlichen Gebiet, welche ein wesentliches Element in der Entwicklung der Screening- und Verhinderungsprogramme der Gewalt in Schulen sind.

**Stichworte:** Gewalt in Schulen, Screening, Risiko des gewaltlichen Verhaltens, das städtliche und landliche Gebiet

**ABSTRACT.** This research assess the main features of school violence both in rural and urban settings, features that can constitute an essential element in projecting screening and school violence prevention programs.

**Keywords:** school violence, screening, risk of violent behavior, urban and rural area

A holistic approach of violence emphasizes three important aspects regarding its prevention: a) the understanding of the factors which establish the risk of the emergence of antisocial behavior; b) the development of some programs in order to diminish the risk factors. c) the increasing of protective factors which allow the annulment of the antisocial behavior. In general, the authors who want to obtain a general view of the antisocial and violent behavior, are trying to answer the following questions: Who are the teenagers that are described as antisocial and violent and what kind of behavior patterns are specific to them? Which factors determine the risk of the adoption of this kind of behavior? Which are the factors which could come against the apparition of these behavior patterns when the subjects are exposed to the risk? What strategies and specific programs can be considered efficient in order to prevent the emergence of this behavior during the adolescence?

In the first part of this paper I will try to synthesize the published paper regarding the teenagers' antisocial and violent behavior, including :a) the characteristics of this part of population and the prevalence of the antisocial and violent behavior; b) the factors which imply the teenagers' risk to adopt this type of behavior; c) the factors which promote the eradication of this behavior and protects the teenager from the manifestation of some of these behavior patterns; d) the strategies and specific programs against the antisocial and violent behavior of teenagers.

## THE METHODOLOGY OF RESEARCH

### *1. 1. The objectives and the hypothesis of study*

#### **1.1.1. The objectives refer to:**

- The investigation of teenagers' (14-18 years old) opinion regarding the frequency of violent behavior in the urban and rural educational environment.
- The investigation of teenagers'(14-18years old) opinion regarding the frequency of violent behavior in the educational environment according to the gender.
- The identification of teenagers'(14-18 years old) opinion regarding the places inside the educational environment where the violent behavior is produced.
- The identification of teenagers'(14-18 years old) opinion regarding precise moments of the day when the violent behavior is produced.
- The identification of teenagers'(14-18 years old) opinion regarding the way in which the teachers succeed in preventing and controlling the violent behavior in the educational environment.

#### **1.1.2. The hypothesis**

- There will not be significant difference between the urban and rural educational environment concerning the frequency of violent behavior.
- There will not be significant difference between the urban and rural educational environment concerning the frequency of violent behavior according to the gender.
- There will not be significant difference between the urban and rural educational environment concerning the places and the moments of the day when the violent behavior is produced.
- There will not be significant difference between the urban and rural educational environment concerning the way in which teachers succeed in preventing and controlling the violent behavior in the educational environment.

**1.1.3. The procedure:** There have been selected 4 schools from an urban environment and 6 schools from a rural environment where questionnaires have been applied to pupils between 14 and 18 years old, from the VII-XI grades, regarding the violent behavior in the educational environment, the places where it is produced and the ways in which teachers succeed in preventing and controlling the violent behavior in the educational environment.

**1.1.4. The used tool:** A questionnaire in order to evaluate the violent behavior in the educational environment.

**1.1.5. The distribution of the group of participants**

**Table no. 1**

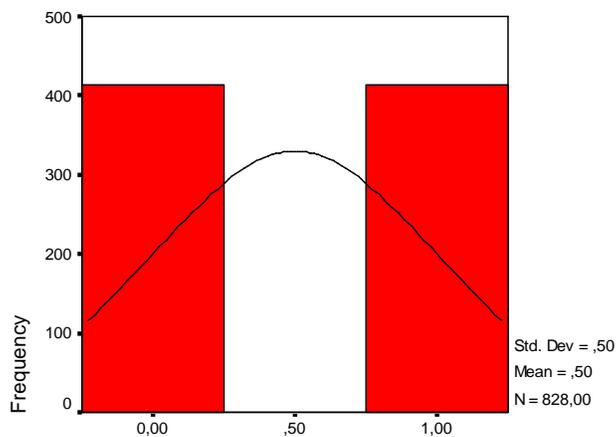
**ENVIRONMENT**

N	Valid	828
	Missing	0
Percentiles	100	1,00

**Table no. 2**

**ENVIRONMENT**

	Frequency	Percentage	Valid percent	Cumulative percent
Valid urban	414	50,0	50,0	50,0
rural	414	50,0	50,0	100,0
Total	828	100,0	100,0	



**Figure no. 1**  
**Environment**

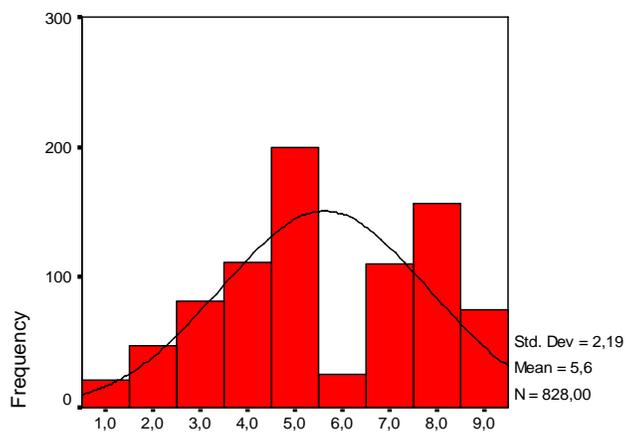
In order to accomplish study no. 1, I have involved a group of 829 pupils whom I have selected according to the nominal variable *environment* (urban and rural). Both groups of participants had an equal number: 414 members each, therefore the distribution is a symmetrical one.

**Table no. 3**  
**The school which the subject attends.**

N	Valid	828
	Missing	0
Percentiles	100	9,00

**Table no. 4**  
**The school which the subject attends.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Profesionala zalau	21	2,5	2,5	2,5
	Călimănești	47	5,7	5,7	8,2
	Liceul Emil Racovita	82	9,9	9,9	18,1
	Colegiu BPH Buzau	111	13,4	13,4	31,5
	Lic. ped Stefan Odobleja	200	24,2	24,2	55,7
	Scoala Timna Mehedinti	25	3,0	3,0	58,7
	Scoala Ulmeni	110	13,3	13,3	72,0
	Scoala Ileanda	157	19,0	19,0	90,9
	Scoala Tâlmaciu	75	9,1	9,1	100,0
	Total	828	100,0	100,0	



**Figure no. 2**

**The school which the subject attends**

THE CHARACTERISTICS OF SCHOOL VIOLENCE IN URBAN AND RURAL AREA

The participants at the study from the two different types of environment (urban and rural) come from 9 schools placed in different regions of the country:

1. **Scoala profesionala Zalau:** 21 participants who represent 2, 5% from the entire group;
2. **Liceul din Calimanesti, Valcea:** 47 participants who represent 5, 7% from the entire group;
3. **Liceul “Emil Racovita”, Cluj-Napoca:** 82 participants who represent 9, 9% from the entire group;
4. **Colegiul Bogdan Petriceicu Hasdeu, Buzau:**111 participants who represent 13, 4% from the entire group;
5. **Liceul Pedagogic Stefan Odobleja, Drobeta Turnu Severin:** 200 participants who represent 24, 2% from the entire group;
6. **Scoala generala Tamna, Mehedinti:** 25 participants who represent 3% from the entire group;
7. **Scoala generala Ulmeni, Maramures:** 110 participants who represent 13, 3% from the entire group;
8. **Grup scolar Ieada, Salaj:** 157 participants who represent 19% from the entire group;
9. **Scoala generala Talmaciu, Sibiu:** 75 participants who represent 9, 1% from the entire group.

**Table no. 5**

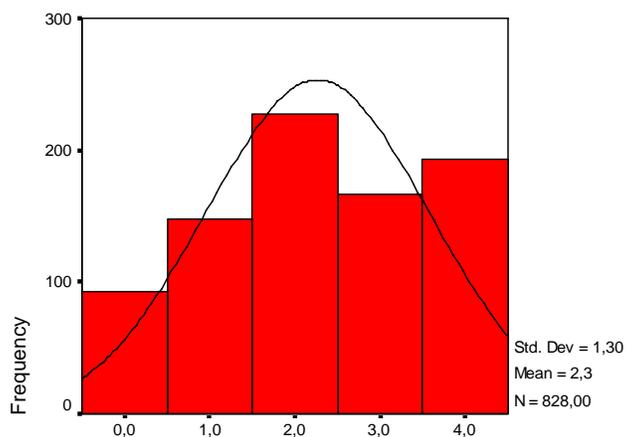
**The Class**

N	Valid	828
	Missing	0
Percentiles	100	4, 00

**Table no. 6**

**The Class**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid VII <sup>th</sup> grade	93	11, 2	11, 2	11, 2
VIII <sup>th</sup> grade	148	17, 9	17, 9	29, 1
X <sup>th</sup> grade	227	27, 4	27, 4	56, 5
XI <sup>st</sup> grade	167	20, 2	20, 2	76, 7
IX <sup>th</sup> grade	193	23, 3	23, 3	100, 0
Total	828	100, 0	100, 0	



**Figure no. 3**

**The Class**

The distribution of participants at the study is the following one:

1. **VII<sup>th</sup> grade:** 93 pupils represent 11, 2% from the entire group
2. **VIII<sup>th</sup> grade:** 148 pupils represent 17, 9% from the entire group
3. **XI<sup>th</sup> grade:** 193 pupils represent 23, 3% from the entire group
4. **X<sup>th</sup> grade:** 227 pupils represent 27, 4% from the entire group
5. **XI<sup>st</sup> grade:** 167 pupils represent 20, 2% from the entire group.

**Table no. 7**

**The gender of participants**

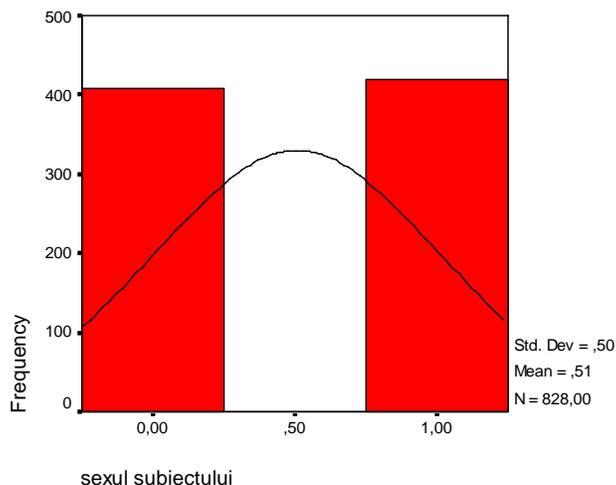
N	Valid	828
	Missing	0
Percentiles	100	1, 00

**Table no. 8**

**The gender of participants**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid feminine	408	49, 3	49, 3	49, 3
masculine	420	50, 7	50, 7	100, 0
Total	828	100, 0	100, 0	

THE CHARACTERISTICS OF SCHOOL VIOLENCE IN URBAN AND RURAL AREA



**Figure no. 4**  
**The subject's gender**

**1.1.6. The distribution of gender:**

- 408 female participants represent 49, 3% from the entire group
- 420 male participants represent 50, 7% from the entire group

**1.1.7. The evaluation of violent behavior of the entire group of participants**

**Table no. 9**

	never	1-2 times	over 2 times
The possessing of harmful objects	89, 9	8, 3	1, 8
The use of harmful objects	78, 6	18, 5	2, 9
Personal possessing of harmful objects in school	88	10, 1	1, 9
Possession of knife by the pupils	68, 7	23, 7	7, 6
Money and other valuable objects as a form of blackmail from a pupil	85, 9	12	2, 1
Personal object theft	67, 1	25, 6	7, 2
Threats coming from other pupils	56, 9	31	12, 1
Threats coming from a group of pupils inside the school	61, 8	29, 6	8, 6
Knife threatening by a pupil	85, 3	11, 4	3, 4
Insults coming from other pupils	27, 3	37, 1	35, 6
Insults coming from other pupils	44, 3	34, 8	20, 9
Insults coming from school's personnel	69, 8	23, 3	6, 9

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Intentional hitting and harshness	43, 2	39	17, 8
Intentional harming	70, 5	20, 7	8, 8
Hitting and harshness coming from school's personnel	83, 3	12, 8	3, 9
Sexual harassment coming from a pupil	89	10	1
Sexual harassment coming from school's personnel	90, 2	7, 9	1, 9
Medical care offered after some fights	89	9, 4	1, 6

An analysis of the dates which regards the participants' opinion related to the presence of the aggressive actions which take place in rural and urban educational environment, indicates, in a decreasing order, the following percentage:

- 1) Insults coming from other pupils- 72, 7%
- 2) Intentional hitting and harshness-56, 8%
- 3) Insults coming from other pupils- 55, 7%
- 4) Threats coming from other pupils- 43, 1%
- 5) Threats coming from a group of pupils inside the school-38, 2%
- 6) Personal object theft-32, 9%
- 7) Possession of knife by the pupils-31, 3%
- 8) Insults coming from school's personnel-31, 2%
- 9) Intentional harming-29, 5%
- 10) The use of harmful objects-21, 4%
- 11) Hitting and harshness coming from school's personnel-16, 7%
- 12) Knife threatening by a pupil-14, 8%
- 13) Money and other valuable objects as a form of blackmail from a pupil-14, 1%
- 14) Possession of harmful objects inside the school-12%
- 15) Medical care offered after some fights-11%
- 16) Sexual harassment coming from a pupil-11%
- 17) Possessing harmful objects-10, 1%
- 18) Sexual harassment coming from school's personnel-9, 8%

It is noticeable the fact that the most frequent violent behavior in an educational environment are:

- Insults coming from other pupils,
- Intentional hitting and harshness,
- Insults coming from other pupils,
- Threats coming from other pupils.

The violent events which have the lowest frequency are:

- Sexual harassment coming from a pupil,
- Possessing harmful objects
- Sexual harassment coming from school's personnel.

THE CHARACTERISTICS OF SCHOOL VIOLENCE IN URBAN AND RURAL AREA

When we refer to violent events with significant gravity, we must take into consideration the screening of the violent indicators in the educational environment.

These events are:

- Threats coming from a group of pupils in the school
- Personal objects theft
- Possession of knife by the pupils
- Insults coming from school's personnel
- Intentional harming

**Table no. 10**

**The places where violent events occur**

	YES	NO
During the brakes, at the booth or at the nearest shop	44, 9 %	55, 1 %
In the teacher's hall	15, 7 %	84, 3 %
In the cloakroom	13, 5 %	86, 5 %
The school's corridors	41, 8 %	58, 2 %
In the gym	25, 4 %	74, 6 %
In the classroom	35 %	65 %
In the school yard or sport field	34, 1 %	65, 9 %
Outside the school	38, 3 %	61, 7 %
On the way to school	24, 8 %	75, 2 %
In other places	32, 5 %	67, 5 %

The places where violent events occur, from the point of view of the participants, are analyzed in the following hierarchy:

1. During the brakes, at the booth or at the nearest shop -44, 9%
2. The school's corridors- 41, 8%
3. Outside the school- 38, 3%
4. In the classroom- 35%
5. In the school yard or sport field-34, 1%
6. In other places- 32, 5%
7. In the gym-25, 4%
8. On the way to school- 24, 8%
9. In the teacher's hall- 15, 7
10. In the cloakroom- 13, 5%

It is very important to identify the places where violent behavior occurs. From the point of view of the participants involved in the study, the violent behavior in the school's background often occurs during the brakes, at the booth or at the nearest shop, and also in the school's corridors. It is noticeable the fact that, even in a small

percentage, the participants believe that violent behavior occurs in the teacher's hall and in the gym. But this type of behavior shouldn't occur at all in these places.

A great percentage of the participants at the study believe that most of the violent behavior occurs outside the school or on the way to school.

Moreover, the classroom and the school yard are considered to be places where violent behavior occurs.

**Table no. 11**  
**The moment of the day when the aggression takes place**

	YES	NO
During the classes	21, 1 %	78, 9 %
Immediately after classes	25 %	75 %
Before the classes begin	22, 8 %	77, 2 %
During the break	48, 7 %	51, 3 %
In other moments of the day	43, 6 %	56, 4 %

1. During the break- 48, 7%
2. In other moments of the day- 43, 7%
3. Immediately after classes- 25%
4. Before the classes begin- 22, 8%

**Table no. 12**  
**The pupils who have aggressed you**

	YES	NO
Pupils from superior grades	38, 6 %	61, 4 %
Pupils from other schools	37, 3 %	62, 7 %
A classmate	33, 7 %	66, 3 %
A pupil from a parallel class	23, 6 %	76, 4 %
A pupil from an inferior grades	20, 2 %	79, 8 %

1. Pupils from superior grades-38, 6%
2. Pupils from other schools-37, 3%
3. A classmate-33, 7%
4. A pupil from a parallel class-23, 6%
5. A pupil from an inferior grade-20, 2%

**Table no. 13**

	YES	NO
A group from the same school	20, 4 %	79, 6 %
A group of pupils from different classes	21, 7 %	78, 3 %
A group from other schools	35, 9 %	64, 1 %
A group from superior grades	25, 8 %	74, 2 %
A group from a parallel class	15, 6 %	84, 4 %
A group from inferior grade	16, 1 %	83, 9 %

THE CHARACTERISTICS OF SCHOOL VIOLENCE IN URBAN AND RURAL AREA

1. A group from other schools-35, 9%
2. A group from superior grades- 25, 8%
3. A group of pupils from different classes- 21, 7%
4. A group from the same class-20, 4%
5. A group from an inferior grade-16, 1%
6. A group from a parallel class-15, 6%

**Table no. 14**

	YES	NO
Sides of school which are not surveilled	26, 9 %	73, 1 %
Help from another pupil	24, 9 %	75, 1 %
Lack of reaction	26, 2 %	73, 8 %
Help from the school's personnel (teacher, principal, guardian, janitor, etc. )	46, 7 %	53, 3 %
Help from family members (parents, brothers, cousins, etc. )	24, 9 %	75, 1 %
Help from other source	36 %	64 %

1. Help from the school's personnel (teacher, principal, guardian, janitor, etc. )- 46, 7%
2. Help from other source-36%
3. Sides of school which are not surveilled-26, 9%
4. Lack of reaction-26, 2%
5. Help from another pupil-24, 9%
6. Help from family members (parents, brothers, cousins, etc. )-24, 9%

**Table no. 15**

	never	1-2 times	Over 2 times
Teachers insulted by their pupils	63, 8 %	23, 1 %	13, 2 %
The vandalism in the classrooms and in other parts of the school	51, 1 %	34, 2 %	14, 7 %
Alcohol consumption	59, 1 %	23, 7 %	17, 3 %
Drug consumption	82, 9 %	7, 7 %	9, 4 %
The perception of safety in school	23, 4 %	21 %	55, 6 %
Teachers' success in controlling the violent behavior	22, 5 %	35, 1 %	42, 4 %
Teachers' interest in preventing the violent behavior	13, 5 %	20, 5 %	65, 9 %
Actions taken by teachers in order to reduce violent behavior	14 %	23, 7 %	62, 3 %
Teachers' success in reducing the violent behavior	17, 4 %	35, 7 %	46, 9 %

1. Teachers' interest in preventing the violent behavior-86, 5%
2. Actions taken by teachers in order to reduce violent behavior-86%
3. Teachers' success in reducing the violent behavior-82, 6%
4. Teachers' success in controlling the violent behavior-77, 5%
5. The perception of safety in school-76, 6%
6. The vandalism in the classrooms and in other parts of the school-48, 9%
7. Alcohol consumption-40, 9%
8. Teachers insulted by their pupils-36, 2%
9. Drug consumption-17, 1%

As a result of the statistic: analysis (The Chi-square test) which refers to the differences between rural and urban environment related to the violent behavior, to the moments of the day when they are produced, to the authors of these violent actions in schools and to the way in which teachers succeed in reducing and controlling violent behavior in the educational environment, the hypothesis of the study no. 1 is partially confirmed because of some significant differences regarding the following variables:

**A. Violent behavior in schools**

- Intentional hitting and harshness
- Personal object theft
- Threats coming from other pupils
- Insults coming from other pupils
- Insults coming from other pupils

**B. The places where violent behavior occurs**

- During the breaks, at the booth or at the nearest shop
- Outside the school
- During the breaks

**C. The authors of violent behavior in schools**

- A group from other schools

**D. The persons who are asked for help**

- Help from the school's personnel (teacher, principal, guardian, janitor, etc.  
)

**E. The issues that the educational environment has to deal with**

- Teachers insulted by their pupils
- The vandalism in the classrooms and in other parts of the school
- Alcohol consumption
- The perception of safety in school

**F. Ways in which teachers prevent and reduce violent behavior**

- Teachers' success in controlling violent behavior of the pupils
- Teachers' interest in preventing the violent behavior
- Actions taken by teachers in order to reduce violent behavior
- Teachers' success in reducing the violent behavior

There haven't been noticed significant differences regarding the other variables. This fact confirms the hypothesis of study no. 1, but only partially.

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## MATHEMATICAL FORMALIZATION OF THEORIES OF MOTIVATION PROPOSED BY ABRAHAM MASLOW AND FREDERICK HERZBERG

IVAN KOTLIAROV\*

**ABSTRACTS.** The present article gives an outline of a mathematical model of theories of motivation proposed by Abraham Maslow and Frederick Herzberg. This model is built on a basis of special non-continuous functions.

**Keywords:** motivation, theories of motivation, mathematical modeling, stimuli.

### INTRODUCTION

The theory of Abraham Maslow – his famous hierarchy of needs – is by far the most known theory of motivation, and the most common in the business and management practice. It also provides a reasonably good fit with the experimental data. Frederick Herzberg's theory, while being less popular, also fits the observations and explains some aspects of human motivation left unexplained by Maslow. However, despite their popularity, these theories, to the best of my knowledge, have never been formalized on a strictly mathematical basis. Indeed, there were some attempts to formalize the Maslow's model, but the authors of these attempts oversimplified this model so that it lost its specific features.

In the present article I will try to describe these two theories from the mathematical point of view.

### 1. MASLOW'S THEORY

Maslow's theory of motivation is based on the following axioms (Maslow 1999):

1. Human motivation is determined by human needs;
2. Human needs can be rated depending on their priority, thus forming a hierarchy. This hierarchy can be graphically represented as a pyramid;
3. This hierarchy is the same for all people;
4. People start satisfying their needs from the lowest level;
5. Human motivation is determined by the lowest unsatisfied need;
6. At any given moment the human motivation is determined by needs from one level. It means that needs from higher levels start influencing the human

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behavior only after the lower needs have been completely satisfied and that the satisfied needs (from lower levels) do not have any influence on the human behavior.

The axiom 5, while used in the original Maslow's model, had been rejected by his followers, so now it is believed that the human behavior can be determined by needs from several levels. All other axioms remain unchanged.

In order to simplify the model let us suppose that the employee can satisfy his/her needs from his/her income only. This approach may seem to be overly simplistic, but it stays on a solid logical basis. Let us study this situation in detail.

Indeed, the salary is not the only mean of remuneration: the employer usually uses other forms of benefits like different honors, promotion, all types of special prizes etc. But it is obvious that all these benefits have a financial equivalent. So the employer has a choice: either he can include the cash equivalent of these benefits into his employee's salary or he can give the employee these benefits. In the latter case the price of these benefits is withdrawn from the potential total income of the employee (the amount he/she would have received in the former case). So the employee virtually paid for satisfaction of his/her needs by these benefits as their price was deduced from his/her potential total income, which, therefore, can be considered as the only mean of satisfaction of human needs.

Let us introduce the following symbols:

$M$  – human motivation;

$D$  – total potential income;

$A_i$  – threshold of satisfaction of the needs of the  $i$ -th level. This value characterizes the total potential income: if  $D > A_i$  then the needs from the  $(i+1)$ -th level start influencing the human behavior. At the same time the needs of the  $i$ -th level continue determining the human motivation;

$B_i$  – threshold of saturation of the needs of the  $i$ -th level. This value is equal to the total potential income that ensures the complete satisfaction of the needs of the  $i$ -th level so that they stop participating in this employee's motivation;

$M_i$  – contribution of the needs of the  $i$ -th level to the total motivation. It shows how the total human motivation  $M$  depends on the degree of satisfaction of the needs of the  $i$ -th level. We will use the term "partial motivation" as a synonym.

It is logical to suppose that the contribution  $M_i$  of the needs of the  $i$ -th level to the total motivation is maximal when the employee starts satisfying these needs (when  $D$  is equal to or slightly above  $A_{i-1}$ ). Later, as the income is grows and provides the possibility to purchase additional goods to satisfy these needs, the marginal utility of each unit of these goods decreases, and so does the contribution  $M_i$ .

Taking into account all these facts and hypotheses we may represent  $M_i$  by an exponential function of  $D$ ,  $A_i$  and  $B_i$ :

$$M_i = C_i e^{\frac{D-A_{i-1}}{B_i-D}}, \quad (1)$$

$C_i$  – a constant for the  $i$ -th level of needs.

It is important to remember that the formula (1) is just a hypothesis. It should be checked experimentally. It may well be, for example, that  $C$  is a function, not a constant.

One can easily see that the formula (1) has no sense when  $D < A_{i-1}$  and  $D > B_i$ . Therefore it should be modified so that:

1. It had sense at any  $D$ ;
2. It take into account the discrete character of the Maslow's model – spontaneous participation of needs of higher level when a certain value of  $D$  is reached.

In my opinion this task can be performed thanks to the modified Heavyside function  $\text{Heav}(x)$ :

$$\text{Heav}(x) = \begin{cases} 0, & x \leq 0 \\ 1, & x > 0 \end{cases}. \quad (2)$$

So the formula (1) will look as follows:

$$M_i = C_i e^{\frac{D-A_{i-1}}{B_i-D}} \text{Heav}(D - A_{i-1}) \text{Heav}(B_i - D). \quad (3)$$

Maslow's theory says nothing about the concrete form of correlation between the total and the partial motivation. For simplicity sake we may suppose that this correlation is additive, therefore:

$$M = \sum_{i=1}^5 M_i, \quad (4)$$

or, according to the formula (3),

$$M = \sum_{i=1}^5 C_i e^{\frac{D-A_{i-1}}{B_i-D}} \text{Heav}(D - A_{i-1}) \text{Heav}(B_i - D). \quad (5)$$

The formula (5), in my opinion, adequately represents the Maslow's theory and corresponds to the axioms 1-5 listed above. This mathematical description can be developed further if we find (theoretically or experimentally) the precise correlation between  $M_i$  and  $D$ ,  $A_i$  and  $B_i$ .

The formulae of the form (5) can be used to mathematically represent most content theories of motivation. As the main difference between these theories is the number of groups of needs taken into account, then the formula (5) can be written down as

$$M = \sum_{i=1}^n f_i(D, A_{i-1}, B_i) \text{Heav}(D - A_{i-1}) \text{Heav}(B_i - D), \quad (6)$$

where

$n$  – number of groups of needs;

$f_i$  – functions describing the contribution of the  $i$ -th group needs to the total motivation. The precise form of these functions should be established experimentally.

It is also important to remember that there are other mathematical models of human motivation – for example, a vector model developed by the author of the present article (Kotliarov 2008) which includes the Maslow's model as a special case. However, the formula (5) is the best representation of the Maslow's theory from the qualitative point of view as it takes into account one of the most important features of this theory – its discrete character..

## 2. HERZBERG'S THEORY

According to Frederick Herzberg, there are two types of factors of influence of the job and the job atmosphere on the psychological condition of the employee (Mescon *et al.* 1992):

1. *Hygiene factors* (describe the job environment – administration policy, technical conditions etc) – if their level is too low, than the employee feels dissatisfaction. If the hygiene factors reach a certain level (and exceed it) then this dissatisfaction disappears, but no satisfaction appears instead. Increase of hygiene factors cannot motivate the employee;

2. *Motivations* (are linked to the character of the job – promotion, approval etc) – if their level is too low, it will not lead to dissatisfaction. However, if the motivations reach a certain level, then the employee feels satisfaction and is motivated to work better. In order to avoid confusion I will use the term stimuli instead of motivations.

It is logical to suppose (however, it is not stated explicitly in the original Herzberg's model) that every employer has a basic level of motivation non equal to zero. It can be explained by the fact that the employees need a job – the job may not be interesting, promising, clean etc, but it still provides them with salary. Therefore, each employee is interested in having a job and has a basic motivation to work well enough in order not to lose this job. As far as I know, this important statement was not used before within the Herzberg's model. As we will see below, this statement substantially simplifies the formalization of this theory.

Obviously every employee has his/her own level of basic motivation  $M_b$ .

The overall motivation of the employee will be determined by the impact of the hygiene factors and stimuli on his/her basic level of motivation.

Let us use the following symbols:

$S_i$  – level of the stimuli of the  $i$ -th group;

$SL_i$  – saturation level of the stimuli of the  $i$ -th group (if the actual value of the stimuli of this group exceeds the saturation level then the motivation of the employee will grow);

$n$  – number of groups of stimuli;

$H_j$  – level of the hygiene factors of the  $j$ -th group;

$HL_j$  – saturation level of the hygiene factors of the  $j$ -th group (if the actual value of the hygiene factors of this group is below this saturation level then the motivation of the employee will decrease);  
 $m$  – number of groups of hygiene factors.

One can easily see that the total motivation of the employee can be calculated on a basis of the following formula:

$$M = M_b + \sum_{i=1}^n F_i(S_i - SL_i) \text{Heav}(S_i - SL_i) - \sum_{j=1}^m K_j(HL_j - H_j) \text{Heav}(HL_j - H_j), \quad (7)$$

where the functions  $F_i(S_i - SL_i)$  and  $K_j(HL_j - H_j)$  describe the influence of the hygiene factors and stimuli (or, better, of their deflection from the saturation level) on the total motivation. The precise form of these functions is unknown, but one can cautiously suppose that they follow one of the psychophysical laws. If we adopt the Weber-Fechner law (Javorskij, Detlaf 1979), then the formula (7) will have the following form:

$$M = M_b + \sum_{i=1}^n Z_i \lg \frac{S_i}{SL_i} \text{Heav}(S_i - SL_i) - \sum_{j=1}^m Y_j \lg \frac{HL_j}{H_j} \text{Heav}(HL_j - H_j). \quad (8)$$

The formula (9) is an adequate mathematical formalization of the Herzberg's theory of motivation. Of course, the Weber-Fechner law can be replaced by the Steven's law, in this case the formula (7) can be easily modified.

## CONCLUSION

The proposed mathematical descriptions of the qualitative models of Maslow and Herzberg are the first ever attempts of formalization of these theories. This description may be a good basis for HR software and therefore may be useful for business and management.

Further research in this field should, in my opinion, be directed towards the precise form of the functions  $F_i(S_i - SL_i)$  and  $K_j(HL_j - H_j)$ . The precise form of the formula (1) is also yet to be found.

Of course, it is necessary to develop special procedures for definition of the parameters  $A_i$  and  $B_i$  for the Maslow's model and  $M_b$ ,  $SL_i$  and  $HL_j$  for the Herzberg's models. Without these procedures the proposed models would be useless for practical tasks.

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## ÉTUDE COMPARATIVE SUR LES PROGRAMMES DE SCIENCES POUR L'ENSEIGNEMENT PRIMAIRE ET LE CURRICULUM DE SCIENCES TIMSS 2007

LILIANA CIASCAI\*

**ABSTRAKT. Vergleichende Analyse des Lehrplans der Elementarschule mit dem Lehrplan TIMSS 2007.** Die von rumänischen Schülern bei verschiedenen internationalen Tests (TIMSS, PISA) erzielten Ergebnisse sind derzeit schlecht und werden möglicherweise auch in Zukunft nicht befriedigend sein. Ziel dieses Artikels ist eine vergleichende Analyse des Schullehrplans zur Umwelterziehung mit den wissenschaftlichen Anforderungen auf der Grundlage der Testergebnisse des TIMSS 2007. Diese Analyse zeigt als gemeinsames Ergebnis die Notwendigkeit der Wissensvermittlung in der Elementarschule, um eine Verbesserung der in den internationalen Tests erzielten Ergebnisse zu erreichen.

**Schlüsselworte:** TIMSS, Umwelt, Wissenschaft, Schullehrplans

Comparative Study on Romanian School Science Curricula of Primary students and the Science Curriculum of TIMSS 2007 testing

**ABSTRACT.** The results of Romanian school students in Science at PISA and TIMSS testings have been and continue to be systematically slack. In the present paper we intend to do a comparative analysis of Science curriculum TIMSS 2007 and Romanian Science School curricula of 4th and 8th grades. This analysis, based on Bloom taxonomy of cognitive domain, identifies both the common points of these curricula and the system of competencies necessary to be developed for Romanian students in order to increase their results in international testings.

**Keywords:** TIMSS, environment, Science, school curricula.

### 1. Introduction: Qu'est-ce que c'est TIMSS 2007?

TIMSS est un projet de l'Association internationale pour l'évaluation de l'éducation (IEA), dirigé par le centre international PIRLS et TIMSS, en collaboration avec un réseau mondial d'organisations et de représentants des pays participants.

L'enquête TIMSS 2007 représente la quatrième enquête internationale, dans le cycle d'évaluation comparative consacrée à l'amélioration de l'apprentissage en mathématiques et en sciences pour les étudiants du monde entier. Menée tous les quatre ans aux étudiants de quatrièmes et de huitièmes, TIMSS fournit des données sur les tendances et les évolutions dans les mathématiques et les sciences.

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Pour éclairer les politiques éducatives dans les pays participants, le projet fournit des informations concernant la quantité, la qualité et le contenu des programmes d'instruction dans les pays participants. Par exemple, TIMSS 2007 collecte des informations détaillées sur l'application et la mise en œuvre des programmes d'enseignement pour les mathématiques et les sciences et aussi des informations sur la formation des enseignants, sur la disponibilité des ressources éducatives et sur l'utilisation de la technologie.

## **2. L'analyse du curriculum de Science qui a fait l'objet de l'enquête TIMSS 2007**

Dans le curriculum des Sciences qui a fait l'objet de l'enquête TIMSS les compétences des élèves sont organisés à trois niveaux taxonomiques (Gonzales et all, 2008, p. 35):

- *Connaissance*. Ce niveau vise des faits, des informations, des concepts, des instruments scientifiques et les procédures que les élèves doivent savoir et maîtriser.
- *Application*. À ce niveau de compétence les étudiants doivent être capables d'appliquer leur connaissance pour résoudre des problèmes ou pour répondre aux questions.
- *Raisonnement*. Les processus cognitifs qui ont fait l'objet d'intérêt pour l'enquête TIMSS ont été ceux impliqués dans la résolution des tâches complexes et non pas ceux qui sont requis dans la résolution de problèmes de routine.

Pour faire une comparaison entre le curriculum TIMSS 2007 et les programmes scolaires de Sciences du cycle primaire nous avons opté pour l'utilisation d'un instrument très connu par les didacticiens: la taxonomie de Bloom. Par exemple, même si les niveaux présentés ci-dessus ne sont pas ceux de la taxonomie de Bloom on peut reconnaître dans le niveau nommé *Raisonnement* deux sous niveaux Bloom: l'évaluation (évaluer et expliquer les stratégies alternatives de la résolution des problèmes) et la synthèse (construction/formuler des conclusions).

Dans le curriculum TIMSS les compétences-clés formulées au niveau de la *Connaissance* sont structurées principalement autour des opérations comme sont «l'identification ...», «la reconnaissance ...», «la description ...». En fonction de l'âge des élèves impliqués dans l'évaluation TIMSS, aux opérations citées on peut ajouter des autres plus complexes, comme sont «la réalisation ...», «la production ...»:

- réaliser ou identifier précisément les connaissances sur les faits scientifiques, les relations, les processus et les concepts (c1);
- produire la connaissance scientifique ou identifier les définitions des termes scientifiques (c2);
- identifier des caractéristiques ou des propriétés des organismes spécifiques, des matériaux ou des processus (c3);
- reconnaître et utiliser le vocabulaire scientifique, les symboles, les abréviations, les unités et les échelles de mesure dans des contextes pertinentes (c4);

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- décrire des organismes, des matériaux physiques et des procédures scientifiques qui témoignent la connaissance des propriétés et des relations, de la structure et de la fonction des systèmes scientifiques (c5);
- identifier ou fournir des exemples précis pour illustrer les concepts intégrateurs/ généraux de la connaissance scientifique (c6).

En outre, à ce niveau, les élèves peuvent être invités à entreprendre les tâches suivantes:

- exprimer des opinions ou clarifier des faits scientifiques ou des concepts avec des exemples appropriés (c7);
- démontrer la connaissance de l'utilisation des équipements scientifiques, des instruments, des procédures, des dispositifs et des échelles de mesure (c8).

Le niveau de l'*application* vise les opérations mentales comme sont: la comparaison, l'hierarchisation, la modélisation, la mise en réseau, l'explication. Ces opérations mentales sont fait en référence aux matériaux, aux systèmes (composants, relations), aux processus physiques et biologiques et aussi aux concepts ou principes construit par des étudiants dans leur apprentissage:

- identifier et décrire les similitudes et les différences entre les groupes des organismes, des matériaux ou des processus (c9);
- distinguer, classier ou ordonner des objets, des matériaux, des organismes et des processus, à la base des leur caractéristiques et des propriétés données (c10);
- utiliser un schéma ou un modèle pour démontrer la compréhension d'un concept scientifique, d'une structure, d'une relation, d'un processus, d'un système physique ou d'un cycle biologique (c11);
- relier les connaissances sur un concept biologique ou physique fondamentaux avec une propriété observée ou déduit, avec un comportement ou avec l'utilisation des objets, des organismes ou des matériaux (c12);
- interpréter l'information relevante, textuelle ou graphique, à l'aide d'un concept ou d'un principe scientifique (c13);
- identifier et utiliser des relations scientifiques, d'une formule ou d'une équation pour trouver une solution, quantitative ou qualitative, qui implique l'application directe ou la démonstration d'un concept (c14);
- fournir ou identifier l'explication d'une observation ou d'un phénomène naturel, en démontrant la compréhension d'un concept scientifique fondamentaux, d'un principe, d'une loi ou d'une théorie (c15).

Le *Raisonnement* représente un niveau taxonomique possible d'être soumis, à son tour, à une hiérarchie du type de la taxonomie de Bloom. Ainsi, nous pouvons parler des domaines suivants:

### *Compréhension:*

- développer et expliquer les stratégies de la résolution des problèmes (c16);
- démontrer la compréhension des concepts ou des thèmes unificateurs dans les différents domaines de la science (c17);

- faire des prédictions fondées sur les évidences, concernant les effets des changements dans les conditions physiques ou biologiques (c18);
- interpoler ou extrapoler des informations fondées sur des faits ou des données (c19);
- développer des inférences valables, fondées sur des données (c20);
- construire/formuler des conclusions appropriées (c21);
- démontrer la compréhension des causes et des effets (c22);
- appliquer les conclusions à des nouvelles situations (c23);
- déterminer les formules générales pour exprimer les relations physiques (c24);
- construire les arguments pour soutenir l'équité/le caractère raisonnable/le caractère rationnel des solutions des problèmes (c25).

*Analyse:*

- analyser les problèmes pour déterminer les relations et les concepts nécessaires pour la résolution d'un problème (c26);
- mise en oeuvre des associations ou des liens entre les concepts des différents domaines de la science (c27);
- détecter des schémas/modèles dans les faits (c28);
- décrire ou résumer les faits (c29);
- élaborer les conclusions générales qui vont au-delà des conditions expérimentales ou données (c30).

*Synthèse:*

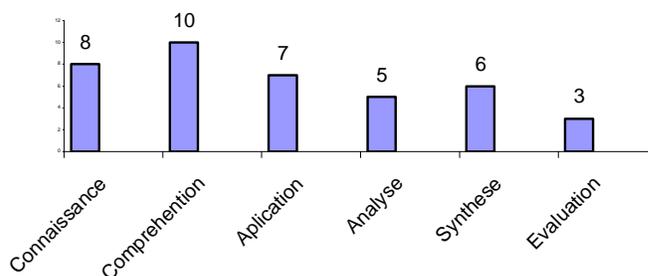
- fournir des solutions aux problèmes qui nécessitent une prise en compte d'un certain nombre de facteurs ou de concepts (c31);
- intégrer les concepts mathématiques et les procédures de la résolution des problèmes scientifiques (c32);
- combiner la connaissance des concepts scientifiques avec l'information qui provienne de l'expérience ou par l'observation des faits, pour formuler des questions auxquelles on peut répondre par l'investigation (c33);
- formuler des assumptions comme des hypothèses testables, à l'aide de la connaissance résultant par l'observation, par l'analyse de l'information et par la compréhension des concepts scientifiques (c34);
- projeter et planifier des investigations appropriées afin de répondre à des questions scientifiques ou pour tester des hypothèses (c35).

*Évaluation:*

- évaluer l'impact de la science et de la technologie sur les systèmes biologiques et physiques (c36);
- évaluer les explications alternatives et les stratégies de la résolution des problèmes (c37);
- évaluer la validité des conclusions à l'aide d'un examen des preuves disponibles (c38) (Gonzales, 2008, p. 35).

Au-delà de l'absence d'une préoccupation pour la taxonomie de Bloom, la description des compétences dans le curriculum TIMSS 2007 est remarquable pour sa précision.

La distribution, sur les niveaux de la taxonomie de Bloom, des compétences qui ont été soumises à l'enquête TIMSS est la suivante:



**Figure 1.** La distribution des compétences TIMSS 2007 sur les niveaux taxonomiques de Bloom

Cette répartition est caractéristique pour tous les tests centrés sur les compétences des étudiants.

### **3. Analyse des programmes scolaires de la «Connaissance de l'environnement» et de «Sciences» dans le cycle primaire**

Dans le cycle primaire en Roumanie on étudie l'objet d'étude «Connaissance de l'environnement» (les deux premières années) et «les Sciences» (les deux dernières années).

L'analyse des programmes scolaires de la «Connaissance de l'environnement» permet de tirer les conclusions suivantes (M. Ed. C, 2003, p. 3-7):

- A) Les objectifs - clés sont centrés sur les suivantes performances:
- développer les capacités d'observation, d'exploration et de la compréhension de l'environnement;
  - connaître, comprendre et utiliser la communication dans des termes précis et spécifiques, pour décrire les phénomènes observés dans l'environnement;
  - développer des attitudes positives sur l'environnement, en stimulant l'intérêt à maintenir un environnement équilibré.
- B) Les objectifs de référence sont formulés aux niveaux différents de la taxonomie de Bloom (le tableau 1).

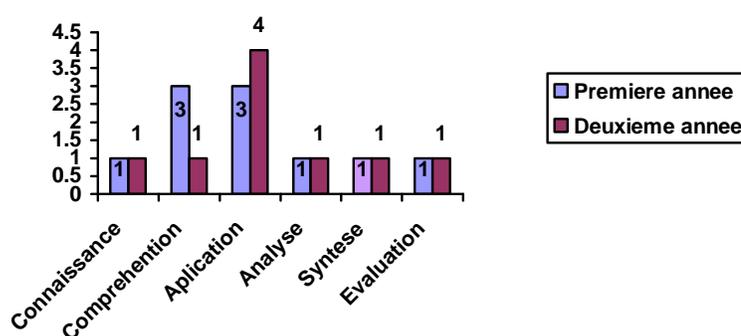
L'identification d'un niveau taxonomique représente une démarche parfois difficile, en raison des formulations vagues utilisées par les auteurs du programme. Par exemple, dans le tableau 1, nous avons placé l'objectif de référence le numéro 3.1 au niveau taxonomique de l'évaluation, en tenant compte du fait que ce type de construction impliquent des décisions sur la pertinence d'objectif pour atteindre le but: «un environnement sain». Dans une certaine mesure, la formulation des activités d'apprentissage a facilité la décision sur le niveau taxonomique de l'objectif.

**Tableau 1.** Les objectifs de référence des programmes scolaires de la «Connaissance de l'environnement», du point de vue de la taxonomie de Bloom

<b>Le niveau taxonomique</b>	<b>Première année</b>	<b>Deuxième année</b>
Connaissance	1.1. décrire les caractéristiques du milieu social et culturel;	1.1. décrire les caractéristiques de l'environnement naturel;
Compréhension	1.2. identifier les caractéristiques des organismes dans un environnement physique; 1.3. énumérer les caractéristiques spécifiques des êtres vivants dans l'environnement proche; 1.5. indiquer certains phénomènes dans l'environnement proche; 2.1. utiliser un langage spécifique aux sciences de la nature pour décrire les êtres vivants dans l'environnement proche;	2.1. utiliser un langage spécifique pour les sciences de la nature, pour décrire les êtres vivants, les phénomènes dans l'environnement;
Application	1.4. observer et désigner les phénomènes de l'environnement proche; 2.3. utiliser des symboles et des informations sur les phénomènes observés dans l'environnement; 3.2. participer à des actions de soins et de la protection des êtres vivants;	1.3. observer et nommer les effets des phénomènes naturels sur les êtres vivants; 2.3. utiliser des symboles et des informations sur les phénomènes observés dans l'environnement; 3.2. participer à des actions de la protection de l'environnement; 3.3. énumérer et décrire quelques actions qu'ils peuvent entreprendre afin de préserver l'hygiène de leur maison et de leur salle de classe;
Analyse	3.3. préciser certaines règles de l'hygiène du corps et de l'alimentation sur la base des informations reçues;	1.2. identifier les similitudes et les différences entre les êtres vivants dans l'environnement proche; * identifier les similitudes et les différences entre les êtres vivants des différentes zones géographiques;
Synthèse	2.2. formuler des questions sur les phénomènes observés;	2.2. formuler des questions sur les phénomènes observés;
Evaluation	3.1. identifier les moyens qui peuvent contribuer à maintenir la vie saine des plantes et des animaux.	3.1. identifier les moyens qui peuvent contribuer à maintenir un environnement sain.

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L'analyse ci-dessus montre l'intérêt des auteurs des programmes scolaires pour développer aux élèves un large éventail des capacités, distribuées à tous les niveaux de la taxonomie de Bloom. Ainsi, dans les conditions déjà mentionnées, nous avons trouvé la suivante distribution sur les niveaux taxonomiques des capacités sollicitées aux élèves par les programmes scolaires «Connaissance de l'environnement»:



**Figure 2.** La distribution sur des niveaux taxonomiques des capacités sollicitées aux élèves dans les premières deux années du cycle primaire

Il est important de remarquer la préoccupation des concepteurs des programmes scolaires de la «Connaissance de l'environnement» pour impliquer les élèves dans la formulation des questions sur les phénomènes étudiés et pour évaluer et synthétiser leur connaissance.

L'analyse des programmes scolaires de Sciences pour le troisième et le quatrième année permettent de constater l'intérêt des concepteurs pour les objectifs qui supposent la résolution des tâches plus complexes que ceux spécifiés dans les programmes scolaires pour l'objet d'étude «Connaissance de l'environnement» (MEdC, 2004, p. 4-8; MEdC, 2005, p. 4-8):

- comprendre et utiliser des termes et des concepts spécifiques à la nature de la science;
- formation et renforcement des capacités et des compétences comme sont l'expérimentation et l'exploration de la réalité, en utilisant des outils et des processus spécifiques;
- développer l'intérêt et la responsabilité pour la maintenance d'un environnement équilibré, adapté à la vie des êtres.

En ce qui concerne les objectives de référence, ils sont présentés dans le tableau ci-dessous, hiérarchisée sur la base de la taxonomie de Bloom:

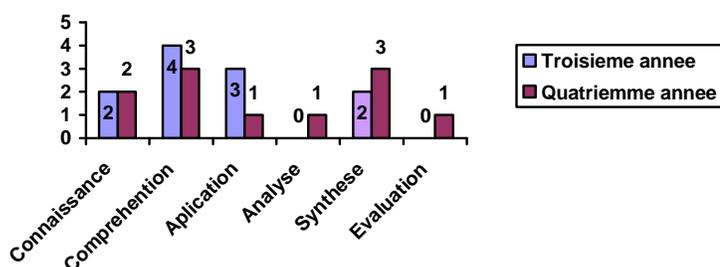
**Table 2.** Les objectifs de référence des programmes de Sciences repartis sur les niveaux taxonomiques Boom

Le niveau taxonomique	Troisième année	Quatrième année
Connaissance	1.3 communiquer dans des formes diverses les observations et les comparaisons fait sur les corps étudiés et sur les expériences réalisées; 1.4.* décrire les procédures simples, de nature scientifique, utilisés dans des expériences;	1.2. décrire les relations entre les systèmes provenant de l'environnement; 1.3 communiquer dans des diverses manières les observations sur les relations entre les parties composantes d'un système et/ou entre les systèmes étudiés.
Compréhension	1.1. indiquer les similitudes et les différences entre les corps sur la base des leurs propres observations; 1.2. ordonner des objets, des organismes, des phénomènes et des événements sur la base de critères donnés; 2.1. enregistrer graphiquement des observations des phénomènes et des processus de l'environnement; 3.1. devenir conscient des effets de l'activité humaine sur l'environnement;	2.1. interpréter la succession des processus et les phénomènes de la nature; 2.2. mettre en évidence les régularités dans les phénomènes sur la base des résultats des mesures effectuées, en montrant d'une manière adéquate les résultats; 3.1. devenir conscients des effets de l'environnement sur leur organisme;
Application	2.2. mesurer avec des outils conventionnels et non conventionnels, en comparant les résultats avec leurs propres estimations; 2.4. utiliser l'observation comme une démarche de la connaissance de type scientifique; 2.5*. respecter les règles de la communication et de comportement négociées dans le déroulement des activités de groupe;	2.4. appliquer les processus de nature scientifiques dans sa propre activité;
Analyse		1.1. identifier les relations entre les parties composantes d'un système étudié;
Synthèse	2.3. dérouler des expériences simples sur la base d'un plan de	1.4 * formuler des hypothèses fondées sur l'utilisation des

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	travail; 2.6*. Fabriquer des jouets et des autres produits, en imitant les objets de son propre environnement;	procédures scientifiques; 2.3. effectuer des expériences simples sur la base des hypothèses données; 2.5 * représenter par modèles les aspects familiers de l'environnement;
Evaluation		3.2* apprécier l'importance de la protection de son propre corps face à certains facteurs de l'environnement.

La distribution, dans la taxonomie de Bloom, des capacités visées dans les programmes de Sciences est présentée graphiquement dans la figure en dessous:



**Figure 3.** La distribution sur des niveaux taxonomiques des capacités sollicitées aux élèves de troisième et quatrième années

L'histogramme présentée montre une distribution pas équilibrées des capacités sollicitées aux élèves, tant au niveau de la troisième que au niveau de la quatrième. Cette distribution ne peut pas être justifiée dans la base d'un considèrent de nature pédagogique.

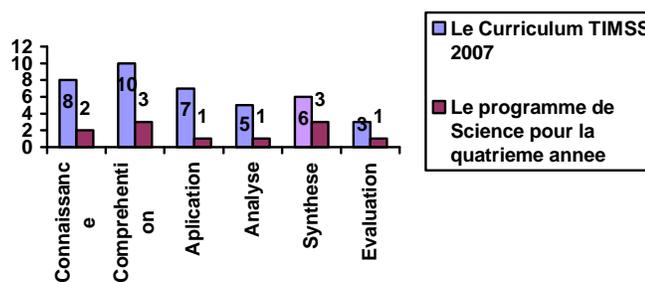
#### 4. Présentation comparative du Curriculum TIMSS 2007 et du programme scolaire de Sciences pour la quatrième année

La Roumanie n'a pas participé à l'enquête TIMSS 2007 réalisée au niveau des élèves de quatrième année. Dans l'enquête TIMSS 2007 parmi les élèves de la huitième année la Roumanie est située sur le 28-ème place, étant dépassé par 27 pays et en dépassent autres 20 pays. Le tableau ci-dessous montrent les scores obtenus par les étudiants roumains en comparaison avec les trois premières places occupées par le Singapour, le Taipei Chinois et le Japon et avec la dernière position occupée par le Ghana (Gonzales & all, 2008, p. 32, 37):

**Tableau 3.** La position de la Roumanie dans l'enquête internationale TIMSS 2007 (sélection)

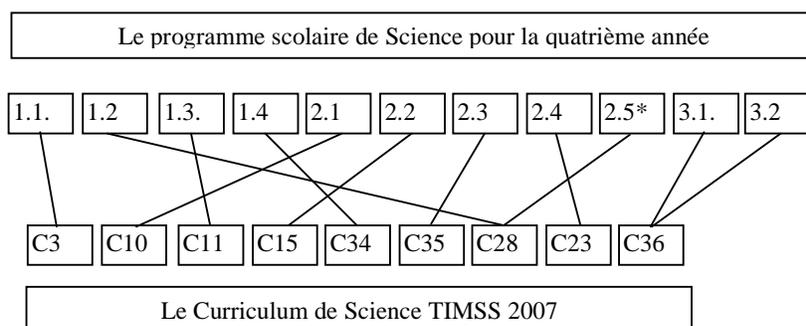
Pays	Le score moyen	Le contenu				Le domaine cognitif		
		Biologie	Chimie	Physique	Les sciences de la Terre	Connaissance	Application	Raisonnement
Le score moyen TIMSS	500	500	500	500	500	500	500	500
Singapore	567	564	560	575	541	567	554	564
Taipei Chinois	557	549	573	554	545	560	565	541
Japon	554	553	551	558	533	555	534	560
...								
Roumanie	462	459	463	458	471	470	451	460
...								
Ghana	303	304	342	276	294	291	316	+

La comparaison effectuée au niveau du Curriculum TIMSS 2007 et du programme scolaire en Sciences pour la quatrième classe illustrent les différences existant regardant le nombre des capacités /compétences et le degré de la couverture de la taxonomies de Bloom:

**Figure 4.** Comparaison de la distribution Bloom des compétences dans le Curriculum TIMSS 2007 et dans le programme scolaire de Sciences (la quatrième année)

La comparaison de ces deux programmes d'études permet la constatation d'une grande différence entre les nombres des compétences spécifiées dans les deux programmes scolaires. Par ailleurs, on peut parler seulement de neuf compétences TIMSS qui peuvent être retrouvées dans le programme scolaire pour la quatrième année.

## ÉTUDE COMPARATIVE SUR LES PROGRAMMES DES SCIENCES ...



**Figure 5.** La correspondance des compétences dans les deux programmes

Sur les 38 compétences énumérées dans le programme d'études TIMSS seulement neuf ont des correspondances dans les capacités présentées dans le programme scolaire de Sciences pour la quatrième classe. Par conséquent, 76.31% de compétences considérées «clés» par le curriculum TIMSS 2007 ne sont pas retrouvées dans le programme en Sciences mentionnée.

### Conclusion

Les mauvais résultats dans les enquêtes internationales obtenus en Science par les élèves roumains peuvent être expliquées par référence aux programmes scolaires des sciences. Le curriculum des pays ayant de bons résultats à cette enquête montre que les petits étudiants sont en mesure d'effectuer certaines approches scientifiques, même s'ils sont complexe. Ne tenir pas compte de cela et n'utiliser pas pleinement leurs capacités, sous le prétexte qu'ils sont «trop petits» et «on ne doit pas les forcer» a l'effet d'un obstacle dans l'acquisition des méthodes scientifiques pendant les années supérieures et conduit à des résultats médiocres aux enquêtes internationaux. Par conséquent, il doit nécessairement reconsidérer le contenu des programmes scolaires pour les adapter à la pratique internationale.

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## STUDY ON STUDENTS' REPRESENTATIONS STARTING FROM TEXTS ABOUT GEOMORPHOLOGICAL PROCESSES

MARIA ELIZA DULAMĂ<sup>1</sup>, OANA-RAMONA ILOVAN<sup>2</sup>

**ZUSAMMENFASSUNG.** In dem Beitrag sind untersucht, einige Sequenzen der Studie, während eines Seminars, in dem die Schüler bearbeiten die Informationen in Texten. Die Studie stützt sich auf dem Problem dass Lehrbücher in der Schule, bzw. in Unterricht geomorphologische Prozesse, werden nicht korrekt und vollständig dargestellt und sind manchmal nicht verständig. Das Organisierte Experiment stützt sich auf zwei *Hypothesen*: Die Schüler sind in der Lage die geomorphologische Produktionsprozess in einem Text zu erklären; Studenten sind in der Lage ein Design-Prozess darzustellen, das auf geomorphologischen Informationen aus einem Text basiert ist. Am Experiment nahmen 44 Studenten aus dem zweiten Jahrgang der Fachrichtungen *Geographie* und *Tourismus Geographie* teil. Die Schüler arbeiteten in Gruppen von vier Personen auf der Grundlage von Text und sind im Seminars und bei der Aufgaben von Lehrer unterstützt. Es ist zu folgenden Schlussergebnis gekommen: die Hypothesen sind erfolgreich getestet, Schüler lösen die grundlegenden Aufgaben erfolgreich in der gegebenen Arbeitszeit durch das Lernen, durch die Zusammenarbeit unter der indirekte Leitung von Professor bei verschiedenen Arbeitsaufgaben; die Studenten erwerben die Kompetenz geomorphologische Prozesse zu erläutern, in einen schriftlichen Text, wenn die richtigen Informationen enthalten, und sie bearbeiten diese Informationen durch grafische Organisatoren mit klaren Anforderungen von Anfang an fixiert.

**Schlüsselwörter:** Erscheinung, Prozess, Darstellung, Vorstellung, Muster, Text-, Informations-Bearbeitung.

**ABSTRACT.** In this paper we analysed several learning sequences in a seminar where students processed information from a text. Our study started from a problem related to texts from school textbooks where the authors did not explain correctly or completely geomorphological processes and only rarely did they represent the respective processes through drawings that facilitated students' understanding. The didactic experiment that we organised tested the following two *hypotheses*: students were able to explain how geomorphological processes produced on the basis of information from a text; students were able to represent

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through drawings the production of geomorphological processes on the basis of information from a text. 44 students studying *Geography* and *the Geography of Tourism* took part in this experiment. Students worked in groups of four on the basis of the text in the support for the seminar, taking into account the tasks given by the professor. We reached the following conclusions: both tested hypotheses were confirmed; students solved tasks at a good level, through learning by cooperation and learning guided by the professor through given tasks; students achieved the competency to explain a geomorphological process if they had a text that included the necessary pieces of information and if they processed those with the help of graphical organisers with clearly formulated tasks.

**Keywords:** phenomenon, process, representation, mental image, model, text, information processing.

### **Outline**

In this paper we analysed several learning sequences in a seminar of the Didactics of Geography where students processed information from a text and drew starting from the respective information. Our study started from a problem related to texts from school textbooks where the authors did not explain correctly or completely geomorphological processes and only rarely did they represent the respective processes through drawings that facilitated students' understanding. So that our students achieved the competency of explaining a geomorphological process, we got them involved into a series of learning situations. The didactic experiment that we organised tested the following two *hypotheses*: students were able to explain how geomorphological processes produced on the basis of information from a text; students were able to represent through drawings the production of geomorphological processes on the basis of information from a text.

### **Theoretical Issues**

We based our paper on several concepts that were essential for teachers: phenomenon, process, representation. *Phenomena* were defined as the changes that substance underwent. There were two types of phenomena: *chemical phenomena*, when the composition of substance underwent changes, transforming it in another substance with new properties; *physical phenomena*, when the composition of substance did not change, such as dissolving, volume increase (swelling because imbibed with water), etc. *Processes* consisted of a series of closely related phenomena that observed certain development patterns, leading to determined results (Todiraş, 1999). Present geomorphological processes included all the processes produced by internal and external agents that determined the transformation of the relief. One could identify physical and chemical processes, gravitational processes and mechanic processes (erosion, transport, and accumulation processes) (Todiraş,

1999). When explaining geomorphological processes one reconstituted its cause – development – effects relationship and clarified several aspects: location, time, the presentation of its phases in a chronological order, identifying causes, conditions, factors and consequences (Dulamă, 2001).

All people constructed certain representations of geomorphological processes as a result of direct visual perception of the world or as a result of indirect perception (e.g. photographs, films, drawings), or after transforming certain verbal messages into images: “*Mental images* are cognitive representations that include information about the form and spatial configuration (relative position) of a sum of objects in the absence of visual stimuli on characteristic receptors” (Miclea, 1999, p. 160).

### Material and Method

For the experiment we realised during the seminar “Processing written information” we wrote an explanatory text on the appearance of landslides and on its basis we proposed students the following *tasks*: 1) Analyse the information on the landslide described in the annex. 2) Complete the lacunary text on the basis of the information in the text in the annex. 3) Complete the lineal vertical graphical analyser with the phenomena that produce in the stage before the landslide takes place and in the start stage, in a chronological order. 4) Complete the tree type graphical organiser on the basis of the information in the text. 5) Represent in a drawing the stage before the landslide appears and the one after the landslide took place. Write on the drawing the parts of the landslide. Students received the text in Annex no. 1, the lineal vertical analyser with the empty boxes and the tree type graphical organiser that we completed partially (Dulamă, 2008).

During this learning situation, we wanted to achieve several operational objectives. On the basis of information taken from a text, students would be able: to fill in the blanks; complete a lineal vertical graphical organiser; to complete a tree type graphical organiser; to draw the land before and after the landslide. During this activity we used several didactic methods: conversation, analysis, fill in the blanks, completing graphical organisers, modelling. Students formed groups of four and had 20 minutes to solve the tasks. 44 students studying *Geography and the Geography of Tourism* took part in this experiment.

**Annex no. 1.** In the Earth cover one may identify monocline structures of alternating permeable sand strata and impermeable clay strata. When it rains, the sand strata at the surface moisten. Between the particles that form the clay there are air molecules. Rainfall water infiltrates these air occupied spaces and makes clay moisten. After the particles of clay moistened as a result of water absorption, their volume increases. This phenomenon of increasing the

dimension of the clay particles as a result of moistening is called *swelling*. Clay particles occupy the space where air was initially and do not allow water to infiltrate among them towards the sand stratum below. After the air got out from the clay mass the clay stratum becomes impermeable. The volume of the clay stratum increases. After the clay stratum becomes impermeable water cannot infiltrate any longer and accumulates in the sand stratum that becomes damper and damper and its mass larger and larger. The cohesion of the moistened sand particles decreases. As the strata are sloping the water that can no longer infiltrate in the clay stratum flows at the basis of the sand stratum and destroys the cohesion between the sand stratum and the clay one. The cohesion between the two strata was also caused by the fact that the clay stratum increased its volume. The sand stratum above slides as a result of the gravitation force when its mass increases over a certain value and the cohesion disappears because of the existence of a water film. Landslides have several parts. The place where the rock mass slides from is called *surface of rupture*. The rock mass that has slidden forms the *main body*. The surface on which the rock mass slides is called the *surface of separation*.

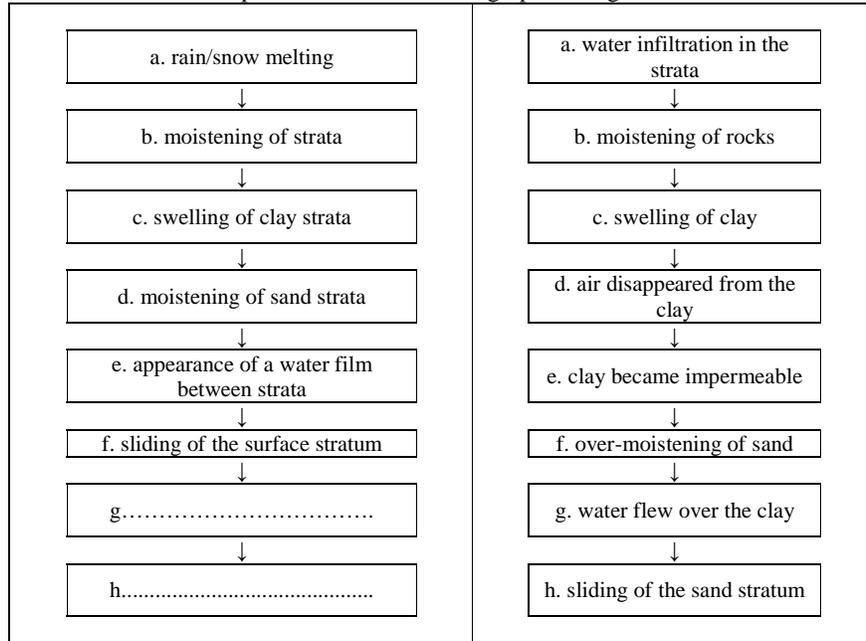
**Annex no. 2. Fill in the blanks.** A condition for a landslide to take place is the presence of alternated ..... strata and ..... strata. A second condition consists of these strata to be ..... Even if these two conditions are observed the landslide cannot take place if ..... and ..... are absent. The respective landslide would not take place if the strata were damp but positioned ..... The increase of the clay particles dimension is ..... The surface of rupture is ..... The main body of the slide is ..... The surface of separation is .....

### Results

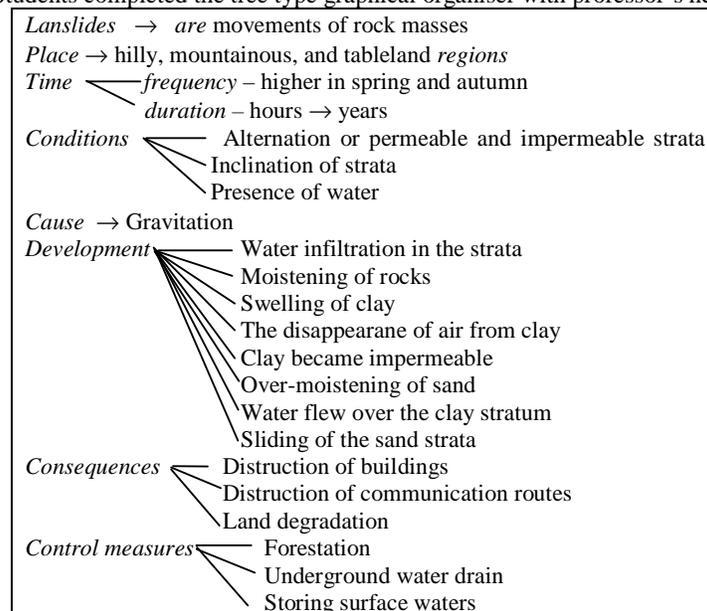
In the fill in the blanks text, students completed, in order, the following words: *permeable, impermeable, sloping, water, gravitation, horizontal, swelling*. They completed the last three sentences as in the text below: The surface of rupture is the *place where the rock mass slid from*. The main body of the slide is *the rock mass that slid*. The surface of separation is *the surface on which the rock mass slid*.

STUDY ON STUDENTS' REPRESENTATIONS STARTING FROM TEXTS ABOUT ...

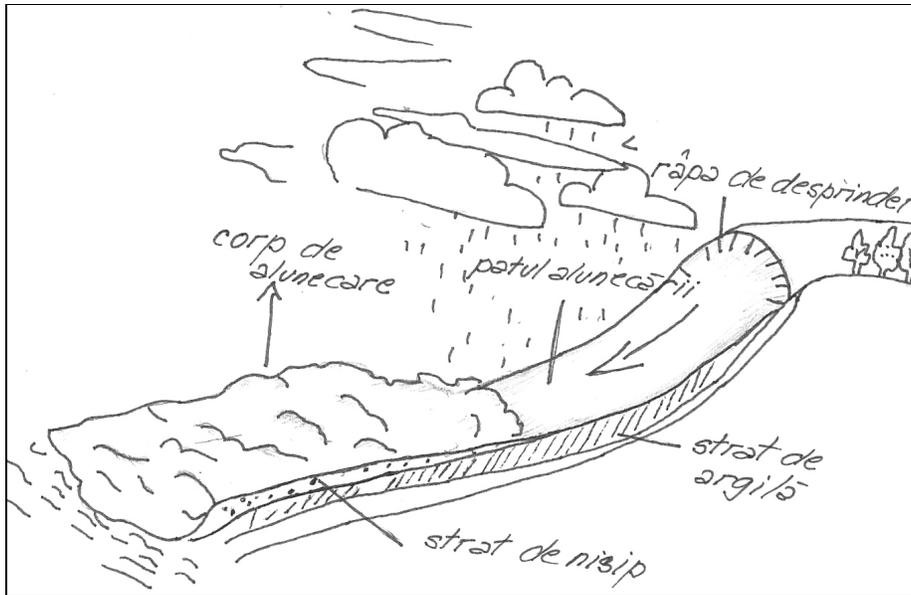
Students completed the lineal vertical graphical organiser as below:



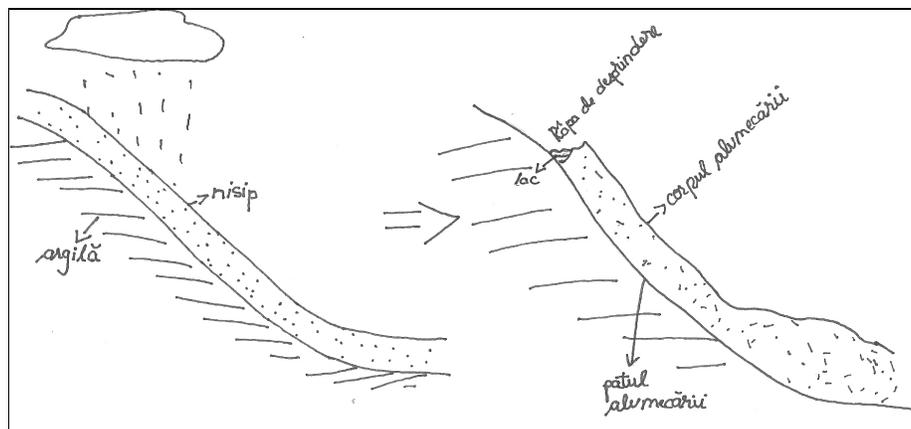
Students completed the tree type graphical organiser with professor's help:



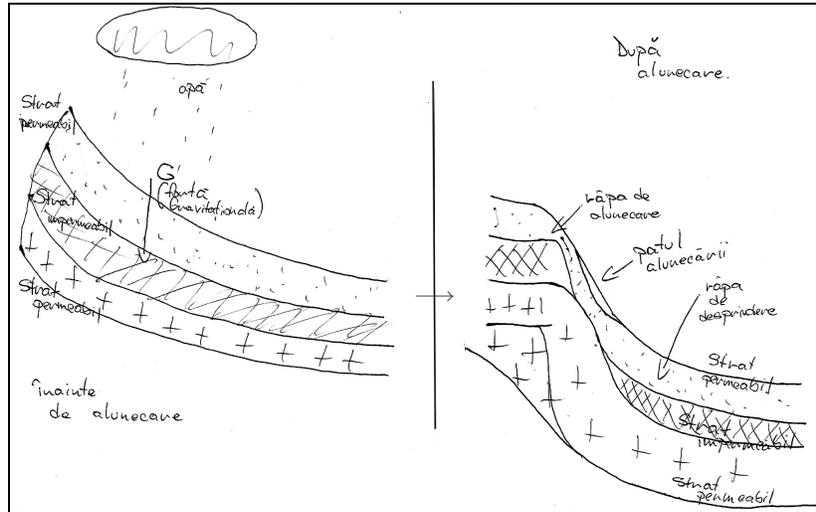
Students realised 11 drawings and we selected five of them that we assessed as being the best ones. We informed them that we were to analyse their papers after the seminar and we gave no other indication than how to represent in the above task.



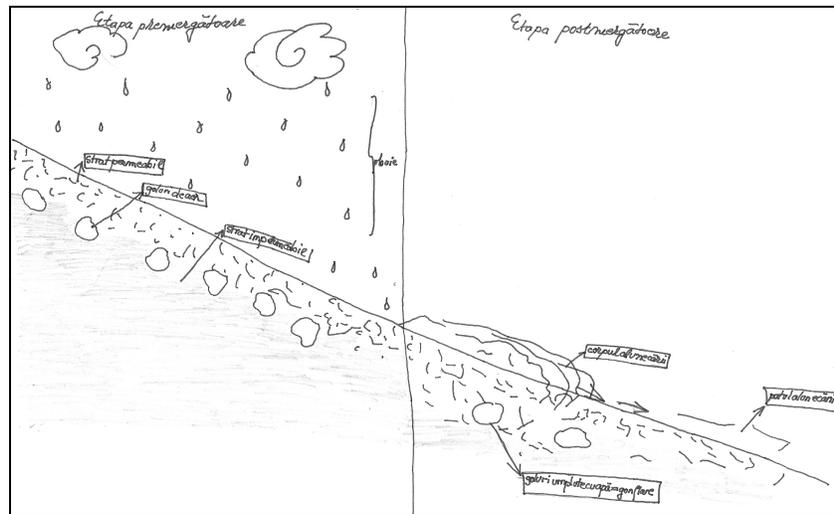
**Fig. 1.** (râpa de desprindere = surface of rupture; patul alunecării = surface of separation; corp de alunecare = main body; strat de argilă = clay stratum; strat de nisip = sand stratum)



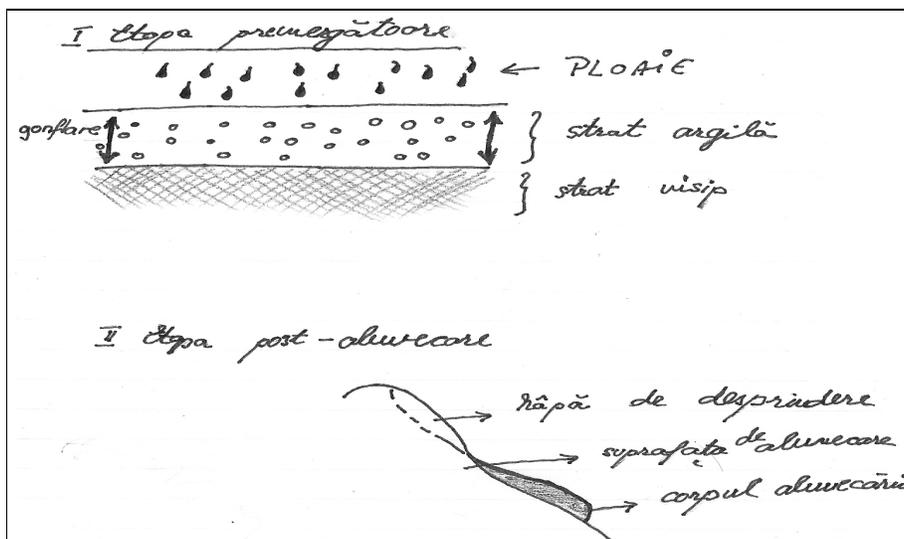
**Fig. 2.** (lac= lake; râpa de desprindere = surface of rupture; corpul alunecării = main body; patul alunecării = surface of separation; nisip = sand; argilă = clay)



**Fig. 3.** (Înainte de alunecare = before the landslide took place; apă = water; strat permeabil = permeable stratum; strat impermeabil = impermeable stratum; G – forța gravitațională = gravitation; După alunecare = after the landslide took place; râpa de alunecare = surface of rupture; patul alunecării = surface of separation; corp de alunecare = main body; strat permeabil = permeable stratum; strat impermeabil = impermeable stratum)



**Fig. 4.** (Etapa premergătoare = before the landslide took place; ploaie = rain; strat permeabil = permeable stratum; goluri de aer = spots of air; strat impermeabil = impermeable stratum; Etapa postmergătoare = after the landslide took place; corpul alunecării = main body; patul alunecării = surface of separation; goluri umplute cu apă – gonflare = water filled spots - swelling)



**Fig. 5.** (I. Etapa premergătoare = before the landslide took place; ploaie = rain; gonflare = swelling; strat argilă = clay stratum; strat nisip = sand stratum; II. Etapa post-alunecare = after the landslide took place; râpa de desprindere = surface of rupture; suprafața de alunecare = surface of separation; corpul alunecării = main body)

### Discussions

For filling in the gaps, students identified easily the necessary information in the text. They had difficulties in identifying the cause (gravitation) that was not explicitly mentioned in the text and that they considered to had been a condition. That proved that they had not known that landslides were in the category of gravitational processes and also that the concepts cause and condition were not clear for them.

Students completed varied lineal vertical graphical organisers, different from one group to another. They established varied numbers of the stages of the process and named them. Discussing, we established as long as possible a series of phenomena (rain or snow melting, water infiltration, moistening of particles, swelling of clay particles) and we ordered them chronologically.

For completing the tree type graphical organiser, students had difficulties in defining landslides. They included landslides in the category of sudden geomorphological gravitational processes and proved to have only an empiric concept (movement of rock masses) about landslides. After this application, students understood partially the mechanism of the production of landslides having in view that we offered them no supplementary explanations to the text so that we

did not influence task solving and the presentation of the other results. For students the three categories of conditions were clear as they were presented explicitly in the text, but students were confused about the place and the time as they did not know what they had to fill in the respective blanks. Students did not receive any indications on the fact that some other type of information was needed: duration, frequency, period, and moment of production of a phenomenon and process, and they did not know precisely those concepts. They had difficulties in differentiating between prevention and control measures, because measures such as forestation, building of fences, protecting nets could be included in both categories. Students completed with our help “underground water drain” and “surface water storage” on the scheme.

Students realised 11 drawings on how landslides appeared and we exhibited and analysed them together. We assessed the drawing in Figure 1 as the most correct, similar to the one in 9<sup>th</sup> grade Geography textbooks. One of the students that realised the drawing confirmed (when asked) that she participated to the Geography Olympiad. In the case of Figure 2 we noticed that they did not draw its margins with precision, and this was true also for the body of the landslide. In Figure 3, students misrepresented the permeable strata at the basis and the clay stratum by using other symbols (conventional signs). They misrepresented the surface of separation, and on the surface of rupture there was another sand stratum and that was impossible in reality if we take into account the inclination of strata. In the drawing in Figure 4 students represented “spots of air” in the clay stratum and that was a proof of a misrepresentation of air particles. In the second stage (that they called wrongly “postmergătoare” – logical contradiction and no such word existed in Romanian) they represented two spaces called “goluri umplute cu apă - gonflare” = “water filled spots – swelling”. So that students achieved correct representations, we drew the clay particles separated by air spots, we explained and drew how those particles get wet, increase their volume, and the space that air had initially occupied was then occupied by clay particles, and the strata became impermeable. In the drawing in Figure 5 students represented a horizontal structure where land could not slide. In table 1 we presented the features that we analysed for all drawings.

During the activity we noticed that students had difficulties when completing the scheme or when defining concepts that the text gave no information about and that they needed previous knowledge or researching. Students could cope with part of those difficulties with professor’s help who offered them supplementary information and feed-back. Students solved at a good level all tasks and that proved that the studied text was a good information source for achieving good representations. In order to make it a better information source we could complete it with the definition of the landslide.

**Table 1.** Features assessed in drawings

Categories	Elements	1	2	3	4	5	6	7	8	9	10	11
Conditions	Rainfall	+	+	+	+	+	+	+	+	+	+	+
	Structure of sand strata and of clay strata	+	+	+	+	+	+	+	+	+	+	+
	Inclination of strata	+	+	+	+	-	+	+	+	+	-	+
Components	Surface of rupture	+	+	+	-	+	+	+	-	+	+	+
	Main body	+	+		+	+	+	+	-	+	+	+
	Surface of separation	+	+	-	+	+	+	+	-	+	+	+
Conventional signs	Sand	+	+	+	-	-	-	+	-	+	+	+
	Clay	+	+	-	-	-	-	-	-	+	+	+
	Arrows	-	-	+	-	-	+	-	+	-	-	+
Text	Title	-	-	-	-	-	-	-	-	-	-	-
	The two stages	-	+	+	+	+	-	-	-	-	-	-
	Name of strata	+	+	+	-	+	+	+	+	+	+	+
	Name of components	+	+	+	+	+	+	+	-	+	+	+

### Conclusions

On the basis of the experiment that we designed during the seminar of the *Didactics of Geography*, with the second year students studying *Geography and the Geography of Tourism*, we reached to the following conclusions:

- 1) Both tested hypotheses were confirmed.
- 2) Students solved tasks at a good level, by learning through cooperation and learning guided by the professor through given tasks.
- 3) Students achieved the competency to explain geomorphological processes if they had a text that included the necessary pieces of information and if they processed those with the help of graphical organisers with clearly formulated tasks.

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## DEVELOPING NUMERACY IN PRIMARY SCHOOL. ERROR PATTERNS IN ADDITION

IULIANA MARCHIŞ

**ABSTRACT.** In this article we study error patterns related with the addition of natural numbers, and also methods of overcoming the identified mistakes. For the research 74 primary school teachers were asked to write down, which kind of error patterns related with addition they have identified in their classroom, and how they tried to overcome these misconceptions and inaccurate procedures. Methods of representing addition and mental arithmetic strategies are presented, too.

**Keywords:** Mathematics teaching, primary school, numeracy, teaching addition, representations of addition

**ZUSAMMENFASSUNG.** In diesem Artikel werden wir die Fehler-Muster im Zusammenhang mit dem Zusatz von natürlichen Zahlen, und auch die Methoden zur Überwindung der festgestellten Fehler. Für die Forschung 74 Primarschullehrer wurden gebeten, schreiben Sie, welche Art von Fehler im Zusammenhang mit Muster Zusätzlich haben sie in ihrer Klasse, und wie sie versucht, um diese Missverständnisse und falsche Verfahren. Methoden, die von Addition und Kopfrechnen Strategien vorgestellt werden, zu.

### 1. Introduction

Pupils have to develop a good foundation in computation in primary school. They have to have a good “number sense”, which means they have to count with understanding, they have to develop a sense of natural, whole and rational numbers, represent and use them in flexible way. Thus in (Marchis, 2006) computational skills of 5<sup>th</sup> grade pupils are analyzed, based on the result of the Zrinyi Iona International Mathematics Competition. The conclusions are, that pupils has a quite good computation skill with natural numbers (for example 86% of the pupils got the correct result for  $(150+750+300):75$ ), but poorer results in computations with whole or rational numbers (for example only 47% of the pupils obtained the correct result for  $-1\cdot5-(-3)\cdot5-6:2$  (computation with whole numbers), and 65% computed correctly  $\frac{2}{3} + \frac{3}{2}$  (computation with rational numbers)). This analysis gives an overview about the numeracy of the primary school children. In

(Marchis, 2007) the misconceptions on rational numbers are studied, misconceptions related with comparison of rational numbers written in form of fractions and decimal numbers, and error patterns in computation with these numbers. In (Denes, 2008) the error pattern in addition and subtraction of natural numbers are studied. Denes's research shows, that mathematical games helps developing pupils' ability for adding and subtracting natural numbers.

In this paper we propose to study error patterns in addition of natural numbers and methods of overcoming these errors.

## 2. Theoretical background

**Numeracy** is the ability to process, communicate and interpret numerical information in a variety of contexts.

According to the Final Report, The Implementation of the National Numeracy Strategy (Reynolds et al., 1998) primary pupils should:

- Have a sense of the size of a number and where it fits into the number system;
- Know by heart number facts such as number bonds, multiplication tables, division facts, doubles, and halves;
- Use what they know by heart to figure out answer mentally;
- Calculate accurately and efficiently, both mentally and on paper, using a range of calculation strategies;
- Make sense of number problems, including non-routine problems, and recognize the operations needed to solve them;
- Explain their methods and reasoning using correct mathematical terms; judge whether their answers are reasonable; and have strategies for checking them where necessary;

In (Stephens, 2000) there is described the situation of numeracy in Australia, and some strategies to develop these competencies to as many children as possible:

- national testing in numeracy;
- using new models of instructions. In (Askew et al., 1997) the importance of guiding students toward more effective procedures and more complex representations is underlined. Teacher introduce the key ideas for the lesson, then set several tasks on which students are to work during the lesson. The problems can be solved using different strategies, some of them more effective than others. Also these problem give the possibility

**Error Pattern Analysis** (EPA) provides and efficient method to identify students' common errors in computation. After discovering that a student consistently uses an inaccurate procedure, the teacher can develop methods of correcting the identified misconceptions and inadequate procedures.

To identify error pattern the teacher has to follow the described steps (Howell, Fox, Morehead, 1993):

- collect sufficient amount of students' solution for each type of problem;
- encourage students to explain how they were thinking during solving the problem, but don't influence them in any way during their explanation;
- register all the answers of the students (written and oral answers too);
- read carefully all the answers and find error patterns for different kind of problems;
- find exceptions for the identified patterns;
- describe in word the identified patterns, then write near all pattern the ways how this error could be corrected;
- ask students to explain their solution, explanation which helps to be sure that the student used the identified error pattern.

**Mental Arithmetic** is the process of producing an answer to a computation without using any computational aids such as calculators, tables, even paper and pencil. To be able to make quick mental calculation, one needs to know some strategies. For example, in mental addition we could use the following tricks (Finan):

- *left-to-right approach*: for example performing the addition  $234 + 361$  first we add  $200 + 300 = 500$ , then  $30 + 60 = 90$ , finally  $4 + 1 = 5$ . In this way we obtain the result: 595.
- *compensation*: to find the result of the sum  $33 + 29$ , we add  $33 + 30$  (as 30 is the next multiple of 10 greater than 29) obtaining 63, then we subtract 1 from the result, to compensate for the extra 1 that we added to 29. Thus the result is  $63 - 1 = 62$ .
- *using compatible numbers*: For example adding  $120 + 50 + 80 + 10$ , we add first  $120 + 80 = 200$ , then we add to this result the other two numbers.
- *breaking up and bridging*: to find the result of  $57 + 35 = 57 + 30 + 5 = 87 + 5 = 87 + 3 + 2 = 90 + 2 = 92$ .

**Representation methods** are very important for primary school pupils. In Figure 1 we can observe two ways for representation of addition: with sets and with the real line. Pupils, when introducing addition, already know these representation methods: they have used sets to learn the numbers between 0 and 10, also they have put these numbers on the real line in order to know their neighbors.

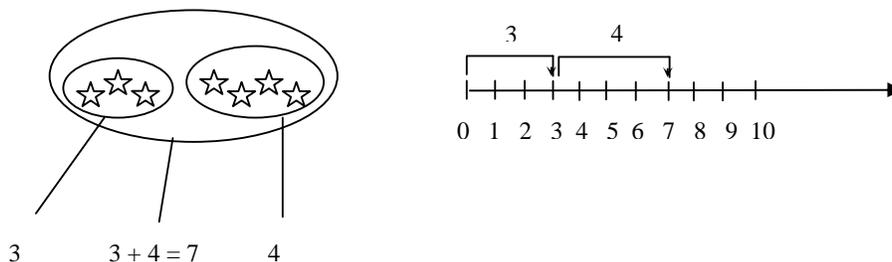
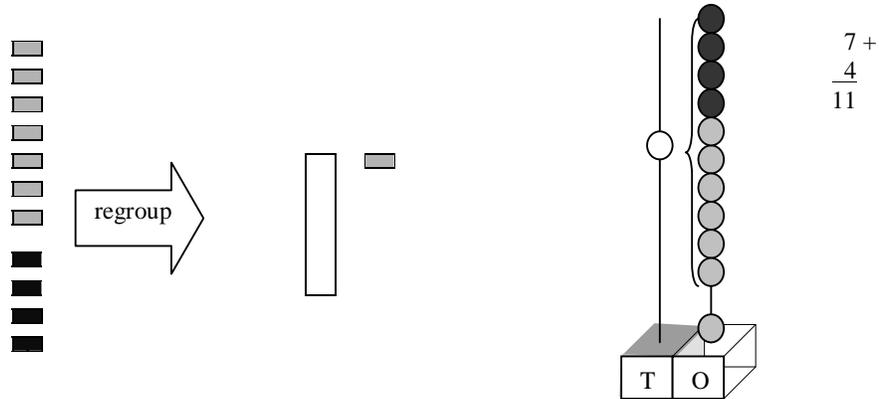


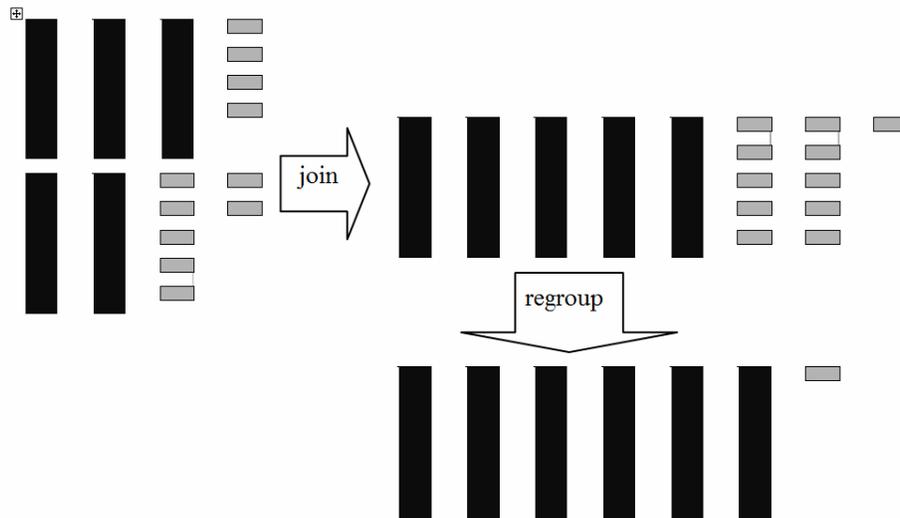
Figure 1. Representations of adding  $3 + 4$

More difficult is to represent those additions, where we add two numbers between 0 and 10, but the result is bigger than 10. In this case it is important, that the pupils understand, that they need to group 10 ones in order to get a ten. In Figure 2 we see two ways of representing the addition of 7 with 4.



**Figure 2.** Representations of adding  $7 + 4$

When adding two numbers between 0 and 10 we still can use the representation methods in Figure 1, too, but the Figure 2 helps to carry on to the addition of 2-digit numbers.



**Figure 3.** Representations of adding 2-digit numbers

When adding two 2-digit numbers we follow the steps (Figure 3):

- divide each number in tens and ones;
- join the tens and ones of the two number;
- regroup ones, if their number is bigger than 10;
- write down the obtained number.

The following step in representation: writing down the numbers one below the other and make the addition. In Figure 4 there are two methods of representing the “carry on” digit.

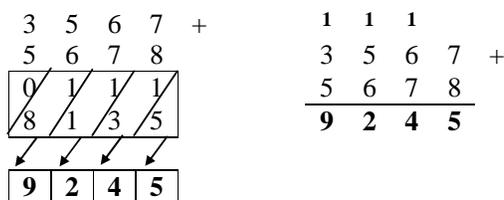


Figure 4. Representation of the “carry on” digit

### 3. Research

**Research design.** 74 primary school teachers, who have participated in the in-service teacher training courses in Sălaj and Harghita county, were asked to write down, which are the most frequently identified error patterns in addition in their classroom, and also, how they try to correct these errors. Their work was qualitatively analyzed.

**Results.** In the following we describe the most frequent error patterns identified by the teachers.

- *place value mistake:* In written addition the pupils don’t care about the place value of the digits. In Figure 5 we can observe that the pupil didn’t write the ones below ones and the tens below tens.

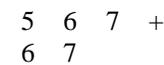


Figure 5. Mistake with the place value of the digits

Teachers try to use mathematical games to develop the “place value” concept. For example the following game is very efficient in fixing the place value concept. Pupils have to make the biggest 3-digit numbers in the following way: they throw with a dice, then put that number on the place where they think is better (in place of one or tens or hundreds); they throw again and again they choose the

place of the digit; they throw the third time and write the digit in the empty place. For this game they have to name the place value of a digit, they have to know that in ordering the numbers hundreds are more important than tens and ones, tens are more important than ones.

Also it is very important to underline, that 0 in a number can't be ignored, it has an important role. For example 68 and 608 are different numbers. Pupils tend to ignore 0 when they write down the numbers.

After the place value concept is fixed the teacher can return to the addition, ask the pupil to write down the addition caring about the place value, then draw vertical line to separate ones, tens and hundreds (Figure 6).

$$\begin{array}{r|c|c}
 \mathbf{H} & \mathbf{T} & \mathbf{O} \\
 5 & 6 & 7 \quad + \\
 \hline
 & 1 & 2 \\
 \hline
 \mathbf{5} & \mathbf{7} & \mathbf{9}
 \end{array}$$

**Figure 6.** *Mistake with the place value of the digits*

- *mistake on dividing the numbers on tens and ones:* We have seen that for introducing addition of numbers with two digits it is important to divide the numbers into tens and ones. This mistake is related with the previous one, as in order to divide the number the pupil has to know the concept of "place value".

It is very important to make exercises of dividing a 2-digit number in tens and ones. As pupils learn this in first grade it is important to build this knowledge progressively starting with exercises with didactical materials, then with drawings and finally in written. Firstly they should use sticks, for example for the number 24 they should take 24 sticks, group these sticks by 10, obtaining 2 tens in this way and 4 ones (which couldn't have been grouped). Then they could represent this similarly as in Figure 2, finally to write down: 24 contains 2 tens and 4 ones.

- *"carry on" mistake:* In Figure 7 we observe that after adding ones  $5 + 8 = 13$ , the pupil wrote down 3 and forgot to carry on the ten obtained to the tens. The correct result should have been 193.

$$\begin{array}{r}
 1 \quad 6 \quad 5 \quad + \\
 \quad \quad 2 \quad 8 \\
 \hline
 \mathbf{1} \quad \mathbf{8} \quad \mathbf{3}
 \end{array}$$

**Figure 7.** *"Carry on" mistake*

In order to correct this error pattern the teacher should use first the representation from Figure 3, in order to underline the fact, that we should use

regrouping in case when the number of ones are bigger than 9. After the pupils understand the procedures behind the algorithm, they can use the written form, and mark the “carried on digit” as in Figure 4.

If pupils understand this procedure, it will be easier for them to understand subtraction when they have to “borrow” from the bigger place valued digit in order to perform the subtraction.

#### 4. Conclusions

Even if the addition is the simplest operation learnt in primary school, pupils can have problems with it. Teachers identified error pattern and misconceptions related with addition: misconceptions related with the place value and inaccurate procedures for addition. As this is the first operation learnt in primary school, it is very important to correct these mistakes, otherwise the learning of other operation are affected too.

An important role in correcting error patterns in addition has the representation of it. Using various ways of representing addition pupils will learn the concept of it and will understand what is behind the algorithm written addition of two numbers.

Another important aspect, which has to be underline, is the importance of development of mental addition skills.

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## SCHOOL AND CHANGE PROBLEM- OUTCOMES OF AN EXPERIMENTAL RESEARCH

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**ABSTRACT.** The parallelism existent between the socio-economic and cultural changes on one hand and reform of the educational systems, on the other hand, represents one of the main conditions for functionality at society level in general. Educational systems reform is not just a particular social or economic case, but it is one of the most important ways for reaching progress and development at the level of society. Education reform is, thus, imposed by transition logic and social transformations. Passing from one type of society and economy implies, in a natural way, a different politics concerning human resources, based on new education goals. The correct diagnosis of the present situation from education represents a sine qua non condition for its efficiency effort in educating.

**Keywords:** educational reform, innovation, evolution type reform, re-structuring type reform, levels of change, research-development model, the model focused on beneficiary, resistance to change, the typology of the reform crisis, the principles of educational reform.

**ZUSAMMENFASSUNG.** Der zwischen den sozioökonomischen und kulturellen Veränderungen bestehende Parallelismus einerseits und die Reform der Erziehungssysteme andererseits, stellt eine der grundlegenden Bedingungen für das Funktionieren der Gesellschaft in seiner Gesamtheit dar. Die Reform der Bildungssysteme stellt nicht nur ein Sonderfall der sozialen oder ökonomischen Reformen, sondern einen der wichtigsten Werkzeuge für Fortschritt und Entwicklung der Gesellschaft, dar. Die Reform des Bildungswesens ist damit selbst durch die Übergangeslogik und den sozialen Veränderungen vorgegeben. Der Übergang zu einer anderen Gesellschafts- oder Wirtschaftsform treibt auf natürlicher Art eine unterschiedliche Politik der menschlichen Ressourcen basierend auf neuen Bildungszielen an. Der einwandfreie Befund der bestehenden Lage im Bildungswesen stellt eine unumgängliche Bedingung für die Effizienz der reformierten Bemühungen dar.

**Schlüsselwörter:** Unterrichtsreform, Neuerung, Entwicklungsreform, Umgestaltungsreform, Änderungsniveaus, Entwicklungsmodell, Benützergestütztes Modell, Änderungswiderstand, Typologie der Reformkrise, Prinzipien der Bildungsreform

### Introduction

Education, as a component of social existence, requires permanent restructuring and adjustments to the features of the transformations that characterizes society progress. The way in which these adjustments anticipate the socio-economic changes or they follow them in a useful time, expresses the efficiency of every educational system.

### Methods

In order to inventory the existent opinions towards change in education a questionnaire was elaborated, it including items regarding the most important aspects in order to express teachers' opinions towards educational reform problem, questionnaire that was administrated, in the beginning of this school year, to a number of 102 teachers from primary, secondary and high school education. In the following the obtained results are presented in a synthetic manner, as well as the corresponding interpretations.

### Results

A first question aimed teachers' opinions regarding the necessity to develop a profound reform in Romanian education.

**Table 1.**  
*Opinions regarding the necessity of developing  
a profound reform in education*

	Frequency	Percent
Valid Yes	94	92,2
No	8	7,8
Total	102	100,0

As it can be observed from the above table, teachers at a large extent, more exactly 92.2 % among them, consider that it is highly necessary to greatly restructure Romanian education system.

Specialized literature mentions the existence of two fundamental models for producing innovation in education: the *research/development model* and the *problem solving model*, or the so called *the model focused on receiver*.

The research-development model goes from theory to practice, from the singular or collective innovator towards the persons that beneficiates from change. Problem solving model is characterized by the fact that the innovator and the innovation beneficiary are one and the same. In these conditions it starts from effective reality towards theory and change is foreseen and put into practice by the very agents of reform.

If the first model benefit from the advantage of a consistent theoretic basis, the second imposes itself through the exact adaptation to the concrete reality requirements and through the extended approval of change among the reform agents, aspect due to which a tight collaboration among the institutions specialized in projecting educational innovations and their beneficiaries is recommended.

In the below table are presented the questioned teachers` opinions regarding the reform model considered as being the most adequate to Romanian educational reality.

**Table 2.***Options regarding the adequate reform model*

	Frequency	Percent
Research-development model	20	19,6
Problem solving model	82	80,4
Total	102	100,0

The fact that 80,4% from the teachers express their option for the problem solving model suggests a certain lack of trust in the capacity of the specialized institutions to offer concrete solutions for the different problems that education come across.

The majority option for the model focused on beneficiary emphasizes, in the same time, the requirement for a major de-centralization in managing education system, de-centralization able to lead to the freedom of action, responsibility and personal initiative regarding the managers of school institutions.

**Table 3.***The relationship between the length in service, in education, and the option for the reform model*

			Reform Model		Total
			Research-development model	Problem solving model	
Length of service	0-5 years	Count	9 (64.3%)	5 (35.7%)	14 (100.0%)
	6-10 years	Count	2 (11.1%)	16 (88.9%)	18 (100.0%)
	11-15 years	Count	0 (0%)	19 (100.0%)	19 (100.0%)
	16-20 years	Count	2 (22.2%)	7 (77.8%)	9 (100.0%)
	over 20 years	Count	7 (16.7%)	35 (83.3%)	42 (100.0%)

The data from the above table underline the existence at teachers` level two different perspectives regarding the reform model considered to be the most adequate, according to their length of service in education. Thus, if teachers work in educational field below the time period of 5 years, they tend to express their option for the research-development model, those that are older in the field prefer, in a large extent, adopt the problem solving model (the difference is significant from a statistical point of view:  $\chi^2= 23.456$ ,  $p<0.001$ ).

This fact, underlines, in our opinion, teachers` lack of trust in a centralized type of reform viability and functioning, lack of trust increasing constantly in relation with adding previous experiences in the field and their increasing working period in education.

By making a comparison with the terminology used in atomic physics, it can be underlined the fact that putting into practice any type of educational innovations is dependent on the existence and the simultaneously of a so called factor of critical mass, a certain amount of material, human, time resources available and of a factor of critical level, represented by the degree of pressure developed in favor of change. In other words, implementing a certain type of innovation is conditioned, on one hand, by the existence of the necessary resources for insuring the aimed change, and, on the other hand, by the manifestation on a large enough scale of a favorable attitude, in relation with this.

Regarding to this aspect in the below table will be presented teachers` opinions referring to the factor whose consistency must be increased, in order to insure education reform success, in the case of Romanian educational system.

**Table 4.**

*The amount of resources necessary for educational reform*

	Frequency	Percent
Critical mass factor	80	78.4
Critical level factor	22	21.6
Total	102	100.0

As it can be observed in table number 4, the questioned teachers consider that, in majority, that there is a positive attitude regarding the desire for change in education, deficient being mostly considered the critical mass factor. Thus, 78.4% from these underline the fact that the reformatory effort must be focused on insuring an adequate amount of human and material resources, while only 21.6% suggest that the main factor that stops reform is teachers` insufficient desire for change.

Analyzing contemporary educational reform systems can be underlined the existence of two main types of reforms: *evolution/progress reform and restructuring reform*.

The evolution reform refers to “the natural” capacity to make progress in a certain educational system, to the changes that appear gradually and progressively as a natural consequence for its transforming and for putting into practice normal phenomenon for self-regulating.

We refer, in this context, for example, to the current changes that appear at the level of contents, methods and instructive-formative means, to the permanent retroactive adjusting of education to knowledge evolution and to society requirements.

Restructuring reform, unlike evolution reform, focuses not only on modernizing contents, means and didactic strategies, but it focuses on producing substantial structural changes at the level of the way education system is organized and functions.

In theory level, any type of educational system can be improved through three strategic alternatives: reducing education reform to evolution reform, continuing evolution reform with periodic involvement of certain restructuring means and replacing evolution reform with restructuring one. The concrete option for one or the other from the reformatory strategies depends both on educational system specificity, and on the concrete priorities of that certain society.

**Table 5.**

*Opinions regarding the type of reform adequate to Romanian educational reality*

	Frequency	Percent
Evolution reform	19	18.6
Restructuring reform	83	81.4
Total	102	100.0

Referring to this aspect, as it can be seen from the analysis of the data presented in the above table, in an overwhelming proportion (81.4%) teachers consider to be necessary a restructuring reform, a type of reform able to reorganize education from the perspective of the characteristics and challenging that define contemporary society.

Another aspect aimed by our investigation refers to the priority areas on which educational reform should focus. As it is well known, the main levels for objectifying innovations concerning education field are:

- material level (*introducing new textbooks or educational means*);
- curricular-procedural level (*implementing new educational contents, alternative methods and strategies in working with pupils*);

- relational level (*restructuring pupil-pupil and teacher-pupil relationships*).

In this context it is underlined the fact that, although those three mentioned levels are interrelated, they claim different reformatting efforts, be easiest to be accomplished being the material changes, and the most difficult to put into practice being those that focus on restructuring interpersonal relationships within classroom.

In the following table will be presented the opinions of 6 teachers, opinions regarding the levels where reformatting intervention highly imposes.

**Table 6.**  
*Data regarding the intervention areas considered as being priorities*

	Frequency	Percent
Material level	38	37.3
Curricular-procedural level	42	41.2
Relational level	22	21.6
Total	102	100.0

The intervention area considered a priority by 41.2% from the teachers is the curricular-procedural one, area aiming both to restructure education contents and curricular areas, and to expand on a larger scale the implementation of the active-participating teaching methods.

The second area considered, as being important, for ensuring education reform success by 37.3% from the teachers is the material one, it including both renewing of the infrastructure elements, and modernizing education means and material equipments that already exist in schools.

Regarding the restructuring of the teacher-class relationship, in order to adopt democratic-participant management type, it was considered as being priority goal for the reforming intervention from education only by 21.6% from the teachers, aspect that underlines the fact that teachers present a certain degree of content concerning this situation.

In the following, the questioned teachers were asked to organize, in an order reflecting the importance of the impact that they consider, the following aspects have on the good development of educational reform, the main types of crisis that influence Romanian educational; system. The results obtained are presented in table number 7.

As it can be seen in the above presented table, the crisis of the educative politics is considered by 25.5% from the teachers as being the main obstacle and factor of the educational reform from our country.

**Table 7.***Factors stopping educational reform*

	Frequency	Percent
The crisis of the educative politics	26	25.5
Financial crisis	21	20.6
Human resources crisis	21	20.6
Knowledge crisis	14	13.7
Managerial crisis	8	7.8
Self-knowing crisis	6	5.9
The crisis of the ability to project	6	5.9

The crisis of the educative politics mainly refers, to the lack of the clear objectives regarding reform and to the lack of agreement regarding different theories, referring to change, as well as to the lack of continuity to establish priorities and development directions for Romanian educational system on medium and long term periods.

The second place within this hierarchy of the stopping reform factors is taken, as 20.6% from the teachers express their opinions, by human resources crisis, and in an equal degree, by financial crisis.

Human resources crisis mainly objectifies within the existent deficiencies at the initial and continuous level teachers` training. To these the insufficient teachers` motivation from a financial point of view adds, as well as the reduced social recognizing of the didactic profession.

On its turn, financial crisis is expressed both through the financial resources insufficiency, and through their deficient allocating and using, with the meaning of wasting them on non-profitable and without any future development directions.

Through table number 8 questioned teachers` opinions regarding this last aspect, are presented.

**Table 8.***Causes of the financial crisis*

	Frequency	Percent
Financial resources insufficiency	36	35.3
Their deficient usage	66	64.7
Total	102	100.0

The data presented in the previous table reveals the fact that the great majority of the teachers, respectively, 64.7% from them, consider the crisis as being the result not as much of the insufficiency of the financial resources allocated for education, but of their inefficient manipulation and usage.

Knowledge crisis is considered to be an important stopping factor for change by 13.7% from the teachers. Knowledge crisis mainly refers to the essence and to the specificity of the educational reform and to the action alternatives that can be put into practice in situations of change blocking.

Complementary to the type of crisis previously mentioned and with convergent effects acts, according to 7.8% from the questioned teachers, is the managerial crisis. Managerial crisis, synthesizes, in general, two defining elements: on one hand the insufficiency of competences in the field of managing change and educational reform, and, on the other hand, the excessive centralization of the leading structures and the reduced degree of information and participation in making decisions of the different change agents.

With less important stopping effects are considered to be, by 5.9% from the teachers, the self-knowing crisis understood as the lack of a complete and clear diagnose on the real situation from education and the crisis of the ability to project, crisis that reflects both the insufficient ability to valorize the prospective dimension of education, and the relative incapacity to project valid diagnosis regarding the evolution of the education system on long and medium term.

We mention the fact that the distinctions previously presented manifest at the level of educational reality a combined action, a single type of crisis being enough for affecting the success of the foreseen educational reform.

Due to this aspect, it is important, as previously to the effective development of any type of reforming approach, to be realized an adequate analysis regarding all the aspects that the certain reform involves. The success of the educational systems reform is conditioned, in general, by three categories of principles: coherence principle, functionality principle and the self-regulation principle.

The coherence principle requires the insurance of a theological coherence (among objectives and means), of a strategic coherence (logical and chronological organization of the actions imposed by reform), of an inter-categories coherence (the correlation of the educational reform with the economic, social and cultural ones) and of an action coherence (insuring the agreement among the main reform actors).

The functionality principle mainly aims aspects such as: to avoid the sacrifice of the present generations of pupils and students, to maintain the equilibrium and the estate of functioning at the level of the educational system, to project certain constant reform directions and to critically and differentially use the positive aspects from the old educational system.

The self-regulation principle is focused of valorizing personal resources for development and innovation in education system and to ensure an active participation for all change agents, in reform action.

Another aspect focused through our research was also to underline the problem of resistance to change. Resistances to change, generated by introducing innovation in education can be presented either as an open conflict, more visible and in the same time more easily to get over, or as a massive resistance, undifferentiated, situation when the efforts to get over the stopping factors of change must be significant.

The main motives that are on the base of the opposition towards change are:

- the refuse due to the ignorance (misunderstanding change essence and content);
- the refuse because of a caprice;
- the refuse determined by the anticipation of loosing personal advantages;
- the refuse based on invoking the failure of previous similar experiences.

**Table 9.**

*Motives for change resistance*

	Frequency	Percent
Refuse from ignorance	41	40.2
Refuse determined by the anticipation of loosing personal advantages	31	30.4
Refuse based on invoking the failure of previous similar experiences	16	15.7
Refuse because of a caprice	11	10.8
Others	3	2.9

The main motive for change resistance is, according to 40.2% from the teachers, the refuse from ignorance. It refers to the lack of correct and clear understanding of the change essence and content, change that is foreseen to be put into practice, a misunderstanding of the mechanisms and of the processes able to insure reform functionality.

The second motive for change resistance is, for 30.4% from the teachers, the refuse determined by the anticipation of loosing personal advantages as a direct and immediate consequence of the implementation of the reforming measurements. In these cases, in a highly part, change resistance is great and undifferentiated.

The next motive for change resistance is represented, according to 15.7% from the teachers, by the refuse based on invoking the failure of previous similar experiences. In this case is brought into discussion the context when the reforming mistakes and the errors from past are invoked as arguments for the passivity and the conservatism of those who, by the nature of their position, should be promoters of change and innovation.

Less consistent, as change refuse, is considered to be the refuse because of a caprice. Regarding this aspect only 10.8% from the teachers consider that this category of refusal could block in a significant manner the reforming approaches. The refuse because of a caprice is rooted in the existence of certain tensions or conflicts, more or less manifested, among change promoters and the persons that should accept and put it into practice.

### Conclusions

Concluding it can be underlined the fact that the great part of the failures registered along the attempt to reform educational systems were generated, not so much by the inconsistencies of the different reform programs, but by the fact that the reform agents (the persons involved in its implementation) proved to be insufficiently prepared or even hostile towards the principle they were asked to put into practice. This aspect imposes the necessity as, previously to the implementation of any types of reforming measurements, to be developed a program for reform agents` adequate informing and for introducing positive attitudes regarding change.

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