WAYS TO FACILITATE THE DEVELOPMENT OF META-COGNITIVE SKILLS IN SEN (SPECIAL EDUCATIONAL NEEDS)

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Abstract: *Learning is central to the modern student-centered pedagogy, focusing on skills, not on content, which implies didactical reflections aspects such as analysis of the ways in which students learn and how they study or identifying strategies leading towards a more profound, systematic study. Self-regulated learning and meta-cognitive control are fundamental prerequisites in terms of achieving an active, authentic and effective learning. Planning, organizing, monitoring and evaluation of learning are meta-cognitive processes that develop from and through the experience and the one who is learning, but current research demonstrates that this process can be accelerated. The present research focuses on the ways of development of meta-cognitive skills in SEN pupils. And the objectives formulated aim at assessing the level of knowledge and meta-cognitive awareness of learners with SEN; developing and implementing techniques to meta-cognitively facilitate learning in the context of educational counseling; the development and implementation of a working algorithm\draft aimed at meta-cognitively developing and making aware the one who learns. The resources involved are: curricular resources specific to the investigated discipline (Biology); cognitive and meta-cognitive resources necessary to optimize learning and self-assessment; social, instrumental support resources, (cognitive and meta-cognitive) by promoting interaction, student-student, student-advisor cooperation, meta-cognitively optimizing learning; declarative and procedural resources relating to implementation of meta-cognitive strategies of planning, monitoring and evaluation aiming at optimizing the student's learning; methodological and procedural resources, material post-it resources, meta-cognitive quizzes and self-questioning cards, check list of*

I. Field literature

Cognitive psychology's progress in deciphering the cognitive and non-cognitive mechanisms of learning, of motivational processes, has provided a fundamental contribution in understanding the process of teaching-learning-evaluation. On the other hand, the scale of the social-school phenomena, including student leaving school, the increase in the frequency of learning difficulties, as well as the issue of education of pupils with SEN have become additional grounds for selecting, promoting methodological approaches centered on specific characteristics of the beneficiaries of education. The learning process is central in modern pedagogy focused on students not on the teacher, on skills not on contents, which involves reflections on issues such as: analysis on how learning is carried out by students and how they study; identifying strategies which lead to a more profound, systematic learning.

In the field's literature, meta-cognition especially, benefits from a series of conceptual boundaries more or less crystallized. Thus, after Flavell (1979) meta-cognition involves active monitoring and subsequent adjustment of cognitive processes in order to achieve the proposed goals. Monitoring and adjusting may take the form of the following behaviors: (Hacker 1998): checking, planning, selection and realization of inferences, self-query and introspection, interpreting current experience.

Paris and Winograd (1990, quoted by Hacker, 1998), believe that most researchers adhere to a definition that includes two fundamental components of meta-cognition: self-assessment and self-control.

Self-assessment refers to reflections upon one's own knowledge and cognitive states and abilities. These reflections are responding to questions about what we know, how we think, when and in what manner we use knowledge or cognitive strategies. In the literature on meta-cognition, monitoring the learning progress was turned into operation in the form of metacognitive judgements ("judgement of learning"-JOL, Nelson and Narens, 1990). The calculation JOL implies the correlation between JOL and remembering and acts as prediction of reviewing performance of the learned material. The situation where the predictions refer to reviewing what has been learnt over at least a few hours after Maki (1998), is the most common in educational practice.

A common situation is also familiarity with the material to be learned. It has been shown, over and over again (Epstein, Glenberg and 1987; Begg and others, 1989; Maki and Serra, 1992), that familiarity can create a fertile land for the development of metacognitive illusions (FOK). In conclusion, we can say that,

learning how to learn becomes an essential aspect of school education, and the issue of development of metacognitive capacity can constitute the hard core of these purchases. Different conceptual approaches, such as: the self-regulated learning model, self-guided learning, and anticipates the issue of meta-memorating and metacognitive skills. Therefore, the capacities of analysis, planning, monitoring and evaluation may be the subjects of direct teaching in the context of the class, the teacher providing models, prerequisites of efficient metacognitive control. All "theories" about attention, memory, and learning abilities are crystallized in personal experience the context of the classroom.

Starting from these premises, we focus throughout this work, on the issue of effective learning, the impact of metacognitive skills on the effectiveness of learning and the problem of the development of these skills in order to improve the pupils' school performance.

II.Research methodology

This research encompasses the achievement of an educational intervention at the level of school counseling office within the Deva Middle School, aimed at achievement of the development of metacognitive behavior associated with learning and problem solving techniques through prompting and metacognitive quiz\self-questioning (planning, monitoring/adjustment and self-evaluation of the cognitive process) towards the optimization of making learning more effective. The stages of research were: the selection of the students who were going to participate in the program; initial testing of students from the two batches (control and experimental); application of assessment tools (meta-cognition, self-efficiency); implementation of the intervention program; monitoring the implementation of the project.

Specific objectives formulated target: assessing the level of knowledge and metacognitive awareness of learners with SEN; developing and implementing techniques to facilitate metacognitive learning in the context of educational counseling; the development and implementation of an algorithm working drafts/aimed at metacognitive development and metacognitive awareness of what is learned.

Resources involved: human resources: the school counselor and form teachers; methodological and procedural resources: online tests and questionnaires applied through opensource platform "Limesurvey"; material resources: computer labs; time resources.

The sample was made up of students of an inclusive education center for all who participate in the program proposed in the activities of the Internal Commission's Internal for Continuous Evaluation. The experimental batch consists of 35 pupils with SEN and the control batch of 30 pupils with SEN, all in gymnasium (n = 65, and N = 74). The batches are independent, but similar in terms of structure and the distribution of the educational results.

Specific strategies relating to initial assessment: reflective strategies concerning metacognitive awareness of the pupils; reflexive strategies, namely the development of cognitive and metacognitive reflections in connection with ways of learning; learning-teaching strategies; metacognitive design teaching strategies.

Teaching activities: systematic assessment/self-assessment of behavior (cognitive, metacognitive, and self-efficiency in learning) of the pupil; group conversations with students; analysis of the students' learning strategies.

III. Analysis of obtained data

Within this research we have encountered a number of difficulties with regard to evaluating metacognitive skills, difficulties that focused on understanding the items, which is why we used an adaptation of the task, a tool for checking metacognitive behavior: Metacognitive Rating Scale (MRS). In situations where we've found huge discrepancies between teacher evaluation and self-evaluation, we decided the student's removal from the experimental batch or assuming control thinking that, self-assessment of the particular students is not to be trusted, and can lead to distortion of the results.
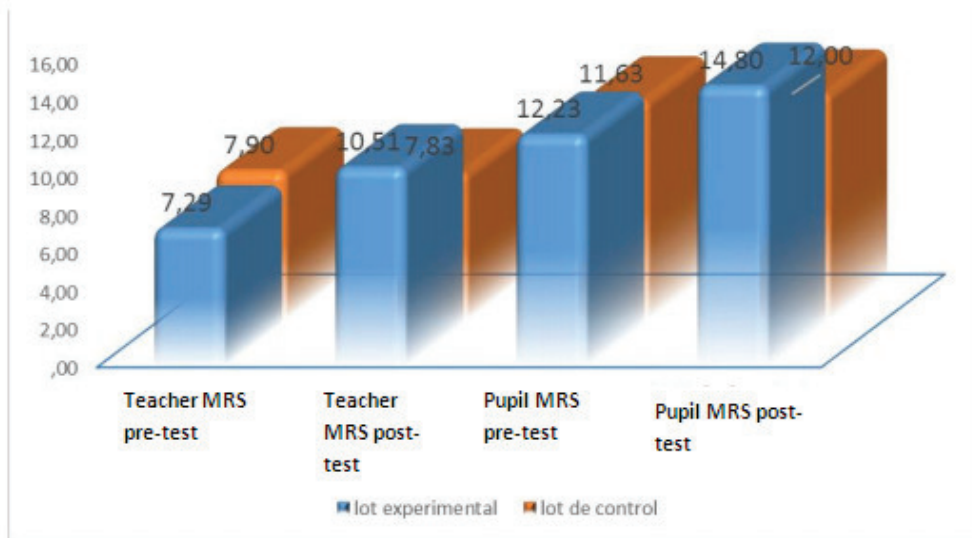

Figure 1 Comparison chart of the two groups at pre-test and post-test: metacognitive skills of pupils with SEN in the assessment of teachers and pupils.

In Figure 1 are presented comparatively the average scores from the two lots of MRS students investigated in the pre-active and post-active stages. We can note, from this g raph that in the pre-active stage the groups do not differ greatly in terms MRS regarding both teacher evaluation and self-evaluation. Another aspect revealed by this chart refers to the notable differences between the teacher's evaluation and the self-evaluation carried out by the student.

One aspect which should be mentioned relates to the differences between the two categories of assessments: the one carried out by the teacher and the other from

the student's self-evaluation. The source of these differences may come from: the error in self-assessment specific to children with SEN (with mental deficiencies) who, due to reduced criticism overestimate their metacognitive abilities; the higher objectivity of the evaluation carried out by the teachers.
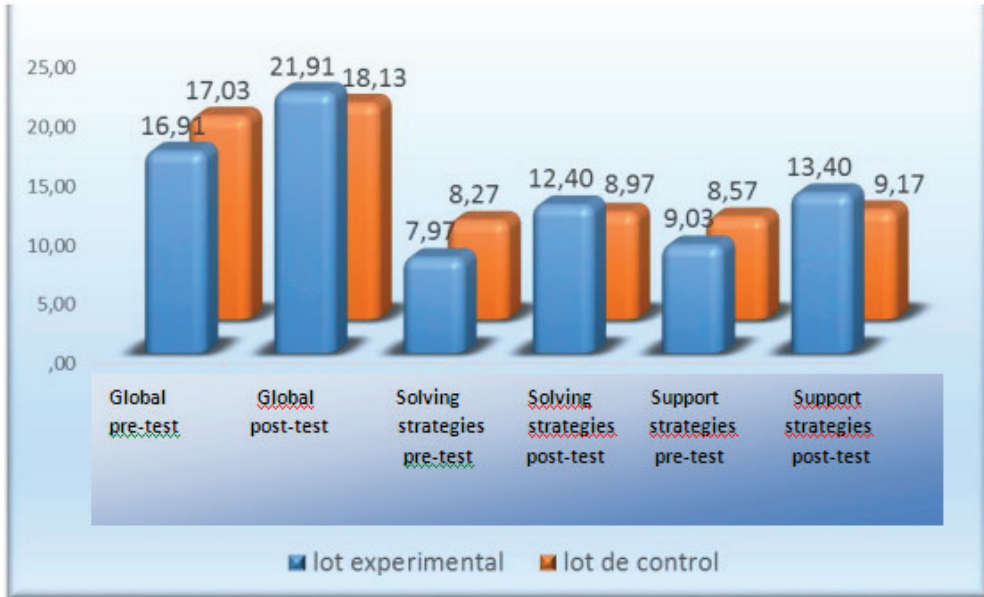

Figure. 2. Comparative chart of the two groups at pre-test and post-test stages regarding meta-cognitive reading strategies in the case of pupils with SEN.

In Figure 2.we present comparatively the average results of the two batches of pupils with SEN in evaluating meta-cognitive reading strategies, strategies involved in comprehension of texts to be learned as well as that of texts expressing the requirements of problems from different disciplines within the curricular area "Mathematics and Sciences". We can find out by analyzing the chart mentioned above that in the pre-active phase differences between the two lots are small, which is why we can assume equivalence of the lots in terms of reading strategies. In the post-active stage, however, it can be seen, on average, an increase in scores in the experimental batch, an aspect which is not highlighted in the case of the control batch.

In Figure 3. we present in comparison the results of the assessment of the level of knowledge at the pre-active and post-active stages. Figure analysis reveals that the in the pre-active phase differences are minimal between the investigated lots, an aspect which allows us to assume that these lots are equivalent with regard to the characteristics measured. However, differences in the post-active stage become notable, meaning that pupils from the experimental lot have obtained higher average grades than those in the control batch.
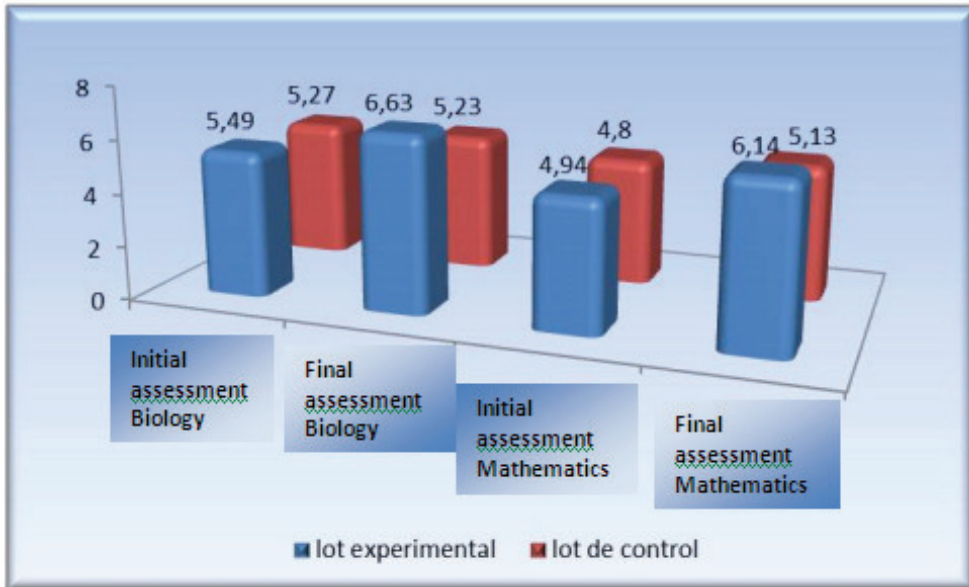
Figure 3. Comparative chart of the two groups at pre-test and post-test stages in terms of school results of pupils with SEN.

This data reveals that the intervention carried out resulted mainly in an increase of the performance of pupils with SEN in the disciplines Mathematics and Biology, an aspect revealed in the experimental batch (which had benefited from the intervention). Based on the data obtained we can reject the null hypothesis and to assign the differences of the effects of our intervention.

IV.Conclusions

During data analysis the conclusions have revealed that the proposed program had resulted in an increase in the levels of use of metacognitive strategies of understanding texts by pupils with SEN. Thus we noted an increase in scores using: metacognitive, global strategies linked to : the formulation of goals and objectives, the search of strategies that improve understanding, reflections related to the lesson contents, browsing the lesson to see the volume and organization, etc.; strategies for solving problems in the event of difficulties in understanding text or tasks, for example reducing the pace of reading in more difficult portions, reviewing more demanding portions, etc.; as well as strategies to support comprehension, summarizing and reflection concerning the more important information, underlining or highlighting some text portions, use of support material, etc.

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