

Back to Basics: The Didactic Functions of the ELI Method

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Abstract

At a historical moment in which educational institutions and teachers are rethinking their way of working as a consequence, among other factors, of the crisis created by the Covid-19 Pandemic, the authors propose the fulfillment of seven didactic functions that, according to their research, increase the probabilities of developmental learning as a viable way of working the "potential development zone" and with it the real educational attention, despite the form of organization of teaching: face-to-face, virtual, distance, through case study, problem solving, projects, etc. What essentially guarantees learning are the didactic functions of what the authors call the "ELI method".

Keywords: Didactic Functions, Developmental Learning, Potential Development Zone, Eli Method

The Wheel Is No Longer Square, The Method Is Not Reduced to Steps

The way to organize the teaching process in a frontal and rote way does not satisfy. Several are the factors that determine it. Among them, the presence of a greater number of possible resources to teach, a new generation with well-defined peculiarities and closely related to information and communication technologies (ICT), and the new social demands generated by the recent Covid pandemic -19.

It is necessary to rethink very well what to do in the face-to-face class and of course in the virtual class, and in the modality in which both face-to-face and virtual "coexist" to achieve the educational objectives set for the level, the school grade, the type of institution, etc. ICT in general can lead to new ways of organizing the teaching process but at the same time they challenge the search for how to work them correctly.

It is also necessary to think about how we present the information to be processed by the students in virtual environments, at a "distance", what type of exercises we propose, how to guide teamwork, cooperatively, in such a way as to achieve the development of social skills. It is not enough to "upload" materials as they are presented for face-to-face education in printed format. It is not enough to "place" a "power point" presentation of many slides full of information with the occasional image. Nor do they present "links" to other sites, many of which distract attention to other topics [1-2].

There is no doubt that declarative knowledge (concepts, laws, theoretical models) and a whole series of intellectual skills lend

themselves more to work "online" while the development of procedural content (psychomotor skills, social skills, attitudes, and values) is lending more to face-to-face environments. But recent research shows that procedural content can be developed in virtual environments if we have, in addition to technological resources, the appropriate didactic method and the teacher with the didactic skills that make it possible [3].

Our research has shown that teachers need to base their work on a psychological theory of learning and have a methodology for proper classroom management. We propose the theory of the social construction of knowledge from the socio-cultural perspective of L.S. Vigotsky, and the cooperative learning (CA) methodology, did not reduce CA to the time of work with one or more colleagues [4-6, 2]. The teacher also needs a method that makes possible in the classroom, what the theory and methodology require.

The proposal based on the results of more than 20 years is the "Constructivist ELI Method of Cooperative Learning", which unlike other methods are not rigid steps or theoretical principles to be fulfilled [4-8].

The essence of the ELI "method" is the fulfillment of seven didactic functions that guarantee developmental learning. Research shows that its fulfillment progressively increases the student's capacity and enthusiasm for learning [4, 9, 5, 10, 6, 7, 11, 8, 12]. It does not matter, the content, the teacher's teaching style or the way the teaching process is organized: "teacher presentation", project work, case study, problem-based teaching, "flipped classroom", etc.

The Didactic Functions

The term "function" like many others has more than one meaning. Here we are interested in the meaning of function as capacity for action and proper exercise, necessary, distinctive, to make possible or contribute to the realization or achievement of "something". In the case of didactics as a science, a function refers to what needs to be done to make it possible for another to learn.

The fulfillment of the didactic functions constitutes in essence what really makes possible the developmental learning that stimulates human growth [13-18].

What is the function of the school: inform or form? Report can anyone; While training, only those who have a validated method not only to inform but to train students can do it, which implies achieving developmental learning [20].

The teacher today is not the only source of information for his students, an issue that becomes evident as the child and youth grow and identify with more and "better" information and communication technologies.

The fulfillment of seven didactic functions identified as a method to teach either in a face-to-face classroom or online, guarantee the effectiveness and equity of the procedures put into practice to achieve learning that stimulates the growth of the person independently, we repeat the type of students, teaching content, or form of organization of the teaching process [4, 5, 7].

The theoretical foundation rests on the legacy of Vygotsky and his followers, in particular teaching the concept of "zone of potential development" [13-25].

Other authors contribute to the understanding of what to do in the classroom to achieve developer learning, among them Jerome Bruner (1915 - 2016), and Jean Piaget (1896 - 1980), and in a very special way my practical work in Moscow at the experimental school of the Academy of Pedagogical Sciences of the former USSR, under the direction of V. V. Davidov and V. V. Repkin who worked on the *Teaching for Development* from the proposals of Vygotsky, Luria and Leontiev and their followers.

The functions and proven in practice of hundreds of teachers and schools that are seven, necessary and sufficient, to move the students, each one and their team (Group potential development zone) in their potential development zone.

The order in which we mention them below does not rank them, nor does it denote the sequence of the didactic functions to be fulfilled, pre-established by the author [2] are:

- *Activation* of higher neuropsychological processes that make possible the segregation of neurotransmitters and with it the nerve connections (synapses, neural circuits) that facilitate the intellectual and affective effort necessary to learn.
- *Orientation of attention*, without which any learning is impossible. Getting the student's attention is challenging, keeping it an even greater professional challenge. School activities must progressively contribute to developing conscious and voluntary attention and thereby awaken interest in knowledge.

Learning is first and foremost a matter of attention.

- The teacher must promote the "confrontation" of the student with the learning object, that is, provide strategies for *Information Processing* that go beyond simple reading that answers questions. This direct learning subject-learning object relationship stimulates the development of critical thinking and with it the interest in learning.
- *Recapitulation*, as a way of specifying what is important, setting the procedure, and keeping in memory in a very personal way what you are learning. To recapitulate is to retake, to review, to see again. It is guided by the teacher and carried out by the student, mainly independently.
- Evaluation of the process and the result of the learning experience should not be limited to the type of summative evaluation. Formative evaluation is essential as well as diversifying the routes used: self-evaluation, cross-evaluation, hetero evaluation, etc. Continuously provide positive feedback and reinforcement to the student to overcome shortcomings and deficiencies, rectify the error and achieve better performance.
- In face-to-face or "distance" class, the teacher must stimulate *Social Interactions* between learners so that among them they negotiate the meaning of the learning object, in other words, promote social interdependence that favors the negotiation of meanings and the development of skills affective partners that favor personal and emotional growth.
- The *Metacognitive Reflection* that allows exercising the "thinking about the thought". Stimulate habits of mind that gradually promote self-regulation of behavior and self-control of their thoughts and feelings.

The ELI "method" is also known as the ELI Approach, it is essentially the fulfillment in each learning experience (lesson), of the seven didactic functions mentioned above, with the adjustments of course to the age, level, cultural environment, conditions, and resources available, etc. It does not matter how the teaching is organized (project, case study, or another of the many modalities of teaching work), what matters is the development by the teacher of the professional didactic competencies to be fulfilled as part of his teaching plan (plan lesson) adjusting to the time and conditions available.

The order of performance of the functions is determined by various factors. For example, it is possible that a lesson begins with the fulfillment of the function of recapitulation of what was learned in the previous lesson, moment "R". But it could start with the "E" moment or with the "O" moment. We call "moments of the lesson" the time in class dedicated to the fulfillment of certain didactic functions which are identified with their initial letter. "E", evaluation, "R", *recapitulation*, "O", attention orientation, "PI", information processing, "A", *activation*, "M", of metacognition, that is, the metacognitive reflection that must accompany all learning experiences, and the "I" of social interactions. The questions: What is the most important? Which one "consumes" the most time? Which order, which first, which next ...? [2].

The fulfillment of the seven moments by the teacher depends on his peculiar way of teaching, on his teaching style, which allows him to make responsible use of "academic freedom". In this way, each teacher will teach differently, but with rigor, and the quality

and equity of teaching is guaranteed as each teacher fulfills the seven functions that the ELI method “requires” as a whole.

But without a doubt, the application of the seven moments of the ELI method is only possible if the teachers develop the professional didactic competences to integrate them adequately in their lesson plan, be it 30 or 50 minutes, an hour or more, or are face-to-face or remotely using information and communication technologies.

The ELI method does not require any change in the institution, nor in the curriculum, nor in the official content of plans and programs, nor does it require extra resources, only training in the development of professional didactic competences (including digital ones) of the teacher, and the creation of teacher learning communities.

The Contributions of the Eli Method

The ELI method is the result of more than 30 years of scientific work (1977 - 2010). Its approach and validation have been carried out through different research modalities in which hundreds of teachers from different types of educational institutions, grades and school levels from Cuba, Mexico and the United States of North America have participated in a rigorously controlled way, as well as some other Latin American countries through the “action - development” modality [6, 8].

The endorsement of the results has been recognized over time by different scientific councils of the higher education institutions in which the author has worked, since the Special Distinction by the Ministry of Higher Education of Cuba (1982), the recognition of the Academia de Ciencia de Cuba (1990), up to the most recent Scientific Board of Nova Southeastern University in Florida, USA (2008).

The research aimed at establishing the ELI method included, among others, the following methodological variants: visits to teachers' classes, visits between teachers to their classes, recording and reflection of the lessons developed, triadic observation, critical review of the literature (“Systematic review”), meta-analysis of best practices, training experiments (Vigotsky) with encephalographic records contrasted with the activity of students in class, pedagogical simulation, opinion polls, personal and group interviews [4-8, 10].

The correct application of the ELI method implies a teacher training for the development of the professional didactic competences of the method, both for the development of the lesson, as well as for the previous planning stage and the subsequent stage, of evaluation of what has been done and documentation of the experience. Investigations Speak.

Our experience and research have shown that when teachers and even more so the institution, apply the ELI method and their own strategies at times of the method, the results are shown in both students and teachers, and both grow and develop their creative potential:

1-In relation to the teacher:

The teacher grows as a professional since he assumes his work

with greater security and enthusiasm. Gradually becoming a consumer of ideas and simple applicator of techniques to a professional who shares his criteria, contributes to the construction of the educational model of the institution and constantly perfects his own didactic model, all this in a learning community with colleagues from the institution.

The development of new learning environments requires a professional, a mediator teacher, with didactic competences based on a theory and a methodological alternative: the socio-cultural constructivist theory and cooperative learning, and a teaching method consistent with the theory and methodology, the ELI method whose creative application allows you to grow as an educational professional.

2-In relation to the students:

Students achieve a more comprehensive and contextualized perspective of learning due to, among other factors, the processes of metacognition, meaning and meaning, and transfer that are stimulated by the strategies used in the ELI method, both individually and in teams, as well as the ways and modes of participation and expression of learning.

Experimental investigations with a control and experimental group carried out in which the academic performance of different educational modalities is confronted, demonstrates the durability of what has been learned when the didactic functions are fulfilled (the ELI social construction method of cooperative learning). The students of the experimental groups are shown to be more creative in problem-solving exercises, decision-making, application of knowledge, transfer of learning, planning of new scenarios, identification of problems, use of given resources, answering questionnaires, among others [5, 6, 2].

While it is true that the essence of the *ELI constructivist method of cooperative learning* is the fulfillment during the development of the lesson of seven didactic functions, it is also true that the greatest effectiveness of such functions is when they are fulfilled in didactic sequences. That is, it is not enough to fulfill it, it is required to establish a succession of activities and actions that allow for the relationship between them to achieve in-depth understanding and internalization of the essence of the object of knowledge that translates into growth of the person.

In Conclusion

It is impossible to educate as in the old [26- 27]. Nor is it possible to do “distance education” like some years ago. It is imposed for the development of the student, of their critical and creative thinking and even more of their formation in values, “new” ways of organizing the teaching process in the virtual and face-to-face classroom and fulfilling the functions inherent to the process through the which makes others learn.

Today, more than ever, a “Return to Basics” is required, to the essential, the so-called “Focusing on the Essentials” proposed by several leading researchers on the need for the teacher to critically and creatively fulfill the functions that make possible a developmental interactivity between the student and the content of teaching, and some *social interactions* between students and of these

with the teacher that potentiate human growth [28-36, 37-52].

The way to organize teaching is one thing, for example among others: case study, problem-based teaching, project teaching, flipped classroom, cooperative learning, teacher presentation, student presentation, colloquium, seminar, workshop, and something else is the need to fulfill the didactic functions that guarantee the students' learning through these forms of organization of the teaching process.

On the other hand, the teaching process must promote learning, but we must distinguish between the one that serves to pass an exam and the one that also serves to grow as a person, developmental learning. To the extent that the didactic functions are fulfilled, no matter the way of organizing the teaching that the teacher prefers, the probabilities of developer learning are greater. Only in this way is it possible to unfold the potentialities of each child, adolescent, young person and even adult person, and the full use of the distinctive capacity of the human being: that of thinking and feeling, creating, and innovating, discovering, and transforming and being adequately inserted in the society that lives.

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