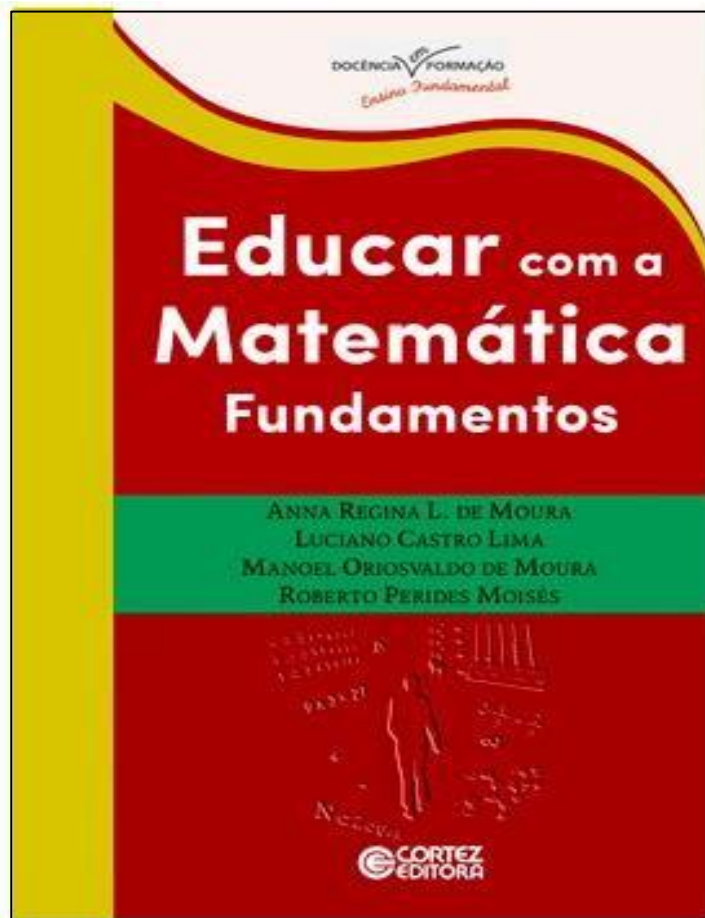


Review

Aprender, só com afeto
Learning, only with love

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ABSTRACT

In this volume of Cortez Editora's collection of Teaching in Education, the concepts and definitions considered necessary to support the mathematics curriculum are systematized, in the authors' view. "Me and the totality", "The community", "The production", "The concrete thought", "The collective", "The error", "The algorithm", "The numerical calculation", "The algebra" and "O think" are some titles of the book's chapters. At the end of each one we suggest themes for debates among readers. An educational mathematics book with a different approach than that, therefore, it proposes to bring the search for what is fundamental to the center of education.

Keywords: Formation. Education. Mathematics. Teachers. Knowledge.

RESUMO

Neste volume da coleção Docência em formação, da Cortez Editora, estão sistematizados os conceitos e as definições considerados necessários para fundamentar o currículo de matemática, na visão dos autores. "Eu e a totalidade", "A comunidade", "A produção", "O concreto pensado", "O coletivo", "O erro", "O algoritmo", "O cálculo numérico", "A álgebra" e "O pensar" são alguns títulos dos capítulos do livro. Ao final de cada um sugerimos temas para debates entre os leitores. Um livro de matemática educativa com uma abordagem diferente e que, por isso, se propõe a trazer para o centro da educação a busca pelos que é fundamental.

Palavras-chave: Formação. Educação. Matemática. Professores. Conhecimento.

1) Presentation

The book **Educar com a Matemática** (Educating with Mathematics) was written by educators who have worked together for approximately 40 years to teach and learn mathematics. Through talking, studying, and teaching at the same and different schools, in classrooms for children, adolescents, and young adults, as well as in university education and teacher training, this group has worked through official curriculum changes, technological transformations, global and national crises, and successive structural reforms of public and private schools and universities. They have not been observers, but rather agents of change, producing and implementing proposals in their fields. As producers and bearers of history, they have something to say to their fellow mathematics teachers. They decided to share their insights in this book, as it is a pivotal moment in their lives and in the history of humanity to synthesize their experience in the school system and offer a didactic and pedagogical approach to teaching and learning mathematics. The objective is to problematize the actions of teachers to identify the main challenges facing humanity today.

Without direction, the wind is of no help to those who do not know where they are going with their ship. That is why the authors loudly and clearly declare their destination: a superior humanity formed and coordinated by generous men and women who inspire each other through good conversation to develop a broader and deeper understanding of the universe and the humans it contains.

With this course set, the first obstacle to overcome is the countercurrent that drags the boat along with the false assumption that the great challenge lies in new *digital programming technologies*. The wrong problem leads to the wrong solution. Industrial and service automation via programmable machines, the technical means of instant global telecommunication, and the ability to process vast amounts of data are not difficulties in life. Man decides when, how much, and how to use them. Products of human labor, these technologies are "slaves, not masters." The real question is: Who is this man making these decisions? The quality of the producer, reproducer, and manipulator of this technology determines whether it will contribute to the life or death of humanity.

This man is divided into classes and wages a permanent war against himself. Alienated from his production, he has progressed in technology and regressed in humanity. He sees Mars but does not see himself on Earth. He has decoded the genome but does not understand the psyche. He knows how to perform nuclear fission but is unaware of human fusion. He reads the stars but does not understand emotion. Though strong of arm, he has developed a mindset geared toward war, transforming it into the common matrix of all his technologies. He views his fellow man as the medieval knight viewed his opponent in a tournament: spear at the ready, visor down, ready to charge on horseback. The other man, whoever he may be, wants to destroy him; until proven otherwise, he is his enemy. In working, he produced mechanisms against work. With these mechanisms, he has swept kindness and generosity from the sensory field—fundamental human aspects that make up the

community that allowed him to leave animality behind through conversation and civilization. Today, man is rapidly regressing to the horde while advancing vertiginously in the power of destruction.

Defining the right problem brings with it the solution. The problem is humanity, or rather, the humans that *people are producing and reproducing* in their collective lives. More precisely, the central problem afflicting humanity today is the widespread and dominant production and reproduction of the inhuman, which centralizes and directs human labor and its technical and technological basis. The current course of history is driven by natural selection, which relegates humans to a utopian state and elevates the inhuman to a real-world dimension. This has led to a permanent struggle between species (*Homo sapiens* vs. all other animals) and "specimens" (*Homo sapiens* vs. *Homo "more" sapiens*) becoming the leitmotif of social life. The assumption is that humans are condemned to remain prisoners of their individuality and incapable of emancipating themselves from their monadic destiny. Therefore, every encounter (or clash) between specimens becomes an inevitable battle with a winner and a loser. Every encounter between two human beings—whether they are father and son, coworkers, neighbors, or sports fans—becomes a collision similar to that which occurs between two knights in medieval tournaments. Each person hides their vulnerabilities behind heavy iron armor and charges their opponent on horseback, armed with a spear, sword, hammer, mace, axe, or flail. The other is always a threat, even if he is Jeremiah, the good one, hidden inside the armor.

In this perpetual war of everyone against everyone, the first casualty is humanity itself. Different civilizations and regional cultures are viewed as inferior and destroyed in the name of a global standard. The belief that technological progress will solve all human problems becomes the justification for replacing human foundations—such as parenthood, friendship, fraternity, education, courtship, neighborhoods, conversations, birth, childhood, puberty, adolescence, youth, maturity, and old age—with digitized systems.

II) Learning, only with affection

The *self* is tyrannical. It is born alone and desires to remain that way. Starting with the mother's womb, the world exists only to serve it. Liberation from this prison is called *education*. The *self* is educated when it leaves itself, finds the *other*, and returns with the understanding that the same must happen to the *other*. The *self* does not exchange places with the *other*. It does not lose itself in the other or put itself in the *other's* place. It encounters the other without leaving itself or giving up its identity. The question is not one of place or position, but of growth. The two *selves* grow until they become one without canceling each other out. We are enriched, denied, and recreated *selves* that are maintained and expanded. Our surface remains, but with greater reach. The great change is in the depth. The surface seems shallow, and the depth can only be known by diving in. The other is the world the *self* did not know. It makes the *self's* senses and feeds them but does not make itself known. The *self* alone is a particle that goes without knowing where or being. It exists only because it flows. In the *self*, it flows with the universe. In us, the *self* flows with the universe.

It took millions of years for animated life to emerge, find the *other*, and return to *itself* with the other. Millions of years passed between the solitary animal and *us*, humans. Those years are now condensed into decades of *education*. It took millions of years for animals to become human. Decades—a whole lifetime—take humans to create those who are born human. This wonderful synthesis is the collective feat of men, the greatest of whom are those who make themselves *human through work*. First, this work created order out of the overwhelming chaos of the untamed universe to ensure survival. In absolute solitude, the species found itself and, in universal fluidity, created human fluidity. Human nature emerged within the physical nature of moving galaxies. Given this first gigantic step, the second becomes necessary: human nature is work, and as such, it must be reproduced with

each new person born alone. The process of becoming human over millions of years is called humanization. The collective creation of each new generation, replacing the generation that has reached the end of its life cycle, is called *education*.

Once illuminated in the eternal darkness of ignorance, humans became *conscious*. This knowledge of themselves, remade with each new generation, created another ignorance. Those who know in decades will never know what it means to know over millions of years. All knowledge coexists with the unknown, and all consciousness walks hand in hand with unconsciousness.

The unknown and the unconscious will always be infinitely greater and deeper than humans. Humans pay the price of exchanging millions of years of becoming for decades of education with the *illusion* of an easier, faster path. Natural human creation is always long, time-consuming, laborious, painful, dramatic, and tragic. However, its reproduced synthesis removes the long, time-consuming, exhausting, painful, dramatic, and tragic millions of years of experience so that the recreation can fit into decades of life. This conversion of quantity into quality is a sublime and necessary effort. This reduction is inevitable, as is the eventual virtue of synthesis. Little by little, the millions are relegated, and only the decades remain. The same reduction retroactively converts the decades into years, the years into months, the months into days, the days into minutes, the minutes into seconds, and finally, the seconds into a snapshot of sight, sound, touch, smell, and taste—an image, a photo, a video, a video game, a special effect, a simulation of reality, or a passing internet signal.

The decades of education in a generation's lifetime offer a glimpse into the millions of years it took for humans to evolve. This reduction is not the result of a choice made lightly by our species. Rather, it is an imposition of reality determined by the natural life cycle called "*generation*." This suggests the illusion that everything can be reduced to an instantaneous internet signal. Unlike education, succumbing to the idea of humanity via the internet is not inevitable. Falling into the trap of magical illusions and special effects

is a choice. Mandrake the magician pulls rabbits out of his hat. We know it's an optical illusion, and we enjoy it. From there, it's an easy leap to assume the illusion is reality. However, this assumption is tragically misleading. Converting fun with a magician into concrete reality is at the heart of "Fool me, I like it." It's easy to be seduced by magic. Just give up laborious human effort and relax into the laziness of *the quick and easy*, which "requires no effort or skill," and let your guard down to the lie.

Education is a question posed to the species about the origin of its humanity. The species responds to this question historically. *I humanized myself for millions of years, and only then did I begin to think. Through thinking, I conclude that I exist because I think; I exist in the human condition because I think.* Those who seek *an easy way* out remove education from their conversation with the genre and seek a magician to grant them access to humanity. The magician answers the call. He leaves the circus ring, takes off his tailcoat and Mandrake top hat, and dresses according to the customer's taste. With quick hand gestures and a ritual of seriousness and sacralization, he converts fun into reality. Millions of years of self-creation are thus reduced to imaginary snapshots of hand movements and quick finger signals, digitizing the imagination itself. *"I think, therefore I am."* The Frenchman René Descartes (1596–1650) wrote this in his 1637 book *Discourse on Method*. Four years later, he "corrected" the phrase to an even more impoverished reduction: *Je pense, donc je suis*; "I think, therefore I am."

Reducing millions of years of reality to an imaginary concept of education is a necessity. Reducing decades of education to a magical digital signal is the distorted, deceptive conversion of necessity into virtue. It is pure fraud, as defined in Article 171 of Decree Law 2848/40CP of December 7, 1940, of the Brazilian Penal Code.

Art. 171: Obtaining an unlawful advantage for oneself or others, harming others, by inducing or maintaining someone in error through

artifice, trickery, or any other fraudulent means. Penalty: Imprisonment for one to five years and a fine ranging from five hundred thousand to ten million réis. If the offender is a first-time offender and the damage is minor, the judge may impose the penalty according to the provisions of Art. 155.

Called by art, the magician dresses as an artist; for the mathematical audience, he dresses Cartesianly; for the audience of philosophers, he presents himself with a pipe; for scientists, he sticks out his tongue. He is stellio, ōnis, the spotted chameleon lizard in action. Cunning, deceitful, and misleading, Stellio, the lizard that changes colors, deceives the insects it feeds on. The reptile's original camouflage is the stellas (stars) painted on its body, announcing its predicted stardom in the limelight of inhuman falsehood. In the second century of our era, the writer Lucius Apuleius presented him as “The Golden Ass.”

Imagery impoverished to fit the digital signal reduces consciousness to a magical perception of its nature. All human language, developed over millions of years and humanized in the process, loses meaning. It becomes sleight of hand, presenting the creation of all kinds as the incredible talent of a single son of God. Art is Da Vinci's work; science is Einstein's genius; sport is Pelé's skill; music is Chopin's melody; technology is Bill Gates's cleverness; and mathematics is Descartes's coordinate.

Hidden in this magical feat is the encounter of the self with the other, the affection that binds them in trust through conversation, and human faith in humanity itself. This mutual frankness allows both to produce the necessary truth for life. In conversation, the self lives with the other and meets with them frequently to pour "the real" into confidence with mutual trust. There, they confide in the reciprocity that generates universal fluency and the possible truth of combined practice *afficere*. This practice acts on something, handles something, and corresponds with the feelings of others as if performing the wonder of human nature: real, concrete, and particular fluency in universal fluency.

Truth is made in trust, confidence, mutual faith, and reciprocal belief in what the other brings to the conversation. There is a certainty that the other is sincere and therefore true. Truth is affective; more than that, truth is affection. The ancient Hindus invented the word "were-o-" thousands of years ago to designate something that is true because it deserves trust. At that time, "dogs were tied up with sausage," and there were no notaries because a word was worth a strand of mustache.

Does affection fall from the sky? No, affection is created by human beings working and striving for life. It comes together in the space between two human beings in empathy:

- the primitive simplicity of men who do not know how to lie;
- the supreme effort that each person can make to identify in themselves the reflection of universal fluency recorded organically in intuition;
 - the second supreme effort to pass on to the other this reflection in its integrity;
 - the third supreme effort to understand the reflection that the other strives to pass on
- the shared practice of the two to intervene in universal fluency based on the intuitive synthesis made with their individual intuitions.

This real, concrete, painful, hard-won movement, where nothing is easy, much less effortless, is affection. It only exists under these conditions and with these assumptions. All other relationships that are not based on this primary simplicity are not affection. Modern, contemporary, current, and postmodern men will only be affectionate if they mobilize within themselves the simple primitive that has never ceased and will never cease to exist in each of us. It is in this that affection is made; it is in affection that conversation is made; it is in conversation that human work is made; it is in human work that the human is made; it is in the human that the species survives and becomes humanity; it is in humanity that one is educated; it is in education that one learns.

The group, the commune, the collective—formed through conversation at work and helping each other—is more than the sum of its parts. It overcomes obstacles and reaches the consciousness necessary to increase intelligence by converting affection into reason. Only those who develop empathy can reason. The depth of reasoning is directly linked to a person's empathic resourcefulness, which is made possible by affection. Intelligence is a human attribute. It is achieved only through conversation, which occurs with affection. Without affection, psychopaths enter conversations through lies and conspire to privately appropriate the human reality produced within them to invert it into inhumanity.

Affection frees intuition from its initial organic determination. This enables the generation of unprogrammed, unconditioned synapses, which overcome bodily imprisonment and form consciousness. In this way, it is man himself making himself *for* himself, humanizing himself, and producing consciousness. Intelligence is the opposite of the shortsighted, voracious greed of psychopathy. Intelligence must be understood as the resourcefulness that manifests among humans *for* the sake of humanity. This is why it occurs in pairs, where one is sensitive to the other and vice versa. The other provides the necessary opposite to generate synthesis. Therefore, thought is only possible in conversation, and dialectics is the essence of thought. The word is binary (signifier/signified, sign/symbol), and the number is binary (quality/quantity, numeral/number, concrete/abstract).

This is what we deal with in the book *Educar com a Matemática* (Educating with Mathematics). Those looking for Descartes' mathematics will skim through its words and phrases but will not understand it. Frustrated, they will conclude that there is no mathematics here and that the book makes no sense. Those looking to escape mathematics may find some meaning in what they read—the wrong meaning! This book was not written to escape mathematics! It was written to embrace mathematics outside the limelight,

far from the simplicity of digital signals, which require neither effort nor skill. Mathematics is not found there. It is firm, beautiful, light, loose, and alive. It is magnificent at the heart of human work!

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