

SIMÓN RODRÍGUEZ AND THE CRITICAL DIDACTICS OF MATHEMATICS

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The following article intends to explore the legacy of Professor Simón Rodríguez as a pioneer of critical thinking in the world. His work is one of the most influential in what is currently known as Critical Didactics in Latin America. Using his work allows one to see how the meeting of different subjects and the present sociopolitical moment becomes evident, specifically in Mathematics. Simón Rodríguez' visionary intellectual ability makes him one of the theorists who has transformed Western European thinking and proposed an epistemic purge.

The general interest is claiming for a public instruction reform; America is called because of the circumstances to start it ... Men are not in the world to interdestroy each other, but to interhelp themselves. Rodríguez (1975a)

Simón Rodríguez (1769–1854) was the creator of interpretations of reality and development approaches which drive the creation of Venezuelan, Latin American and Caribbean identity. His educational thinking gave him an honorable place as the most important pedagogue of the Americas in the XIX century. Critical Mathematics Education is a pedagogic, didactic and curriculum conception which humanizes and socializes the Mathematics so that it can play a leading role in the development of deep processes of political and social consciousness. Through this, reflexive, argumentative, critical and decisive human beings who understand and develop their skills and abilities are formed to make it possible to have a constructive and participative performance within the collective to which they belong. The ideas of this great Venezuelan, who named himself Samuel Robinson when living in North America and Europe, were vital for the strengthening of the new National Curriculum project after the wars of independence from the Spanish colonization. One of Simón Rodríguez' premises was to promote originality, especially in such an innovative reality as the American one. Therefore, he wanted education to create new ways of learning in order to break with the repetitive scheme inherited from the colonial classic discourse. He developed a philosophy in which revolution meant to put an end to the characteristic colonial mindset of Venezuelan, Latin American and Caribbean education, present in the pedagogical practices of that time, and still dominating current educational practices in the continent.

American societies (published in 1828) and *Lights and social virtues* (published in 1840) are Simón Rodríguez masterpieces. During his long and conflicted life, the

Venezuelan philosopher spread his pedagogic work all over the continent. Nevertheless, he was little understood in his native Caracas, and was also chased by failure in Colombia, Ecuador, Perú, Bolivia and Chile. Perhaps, for García Bacca (1981), the society of that time was not able to understand his theoretical basis, summarized in one main idea: It is not enough to create republics politically; it is necessary to *invent* the citizens to make them real. Anything else is just a fiction. Maybe the lack of attention to this deep idea can be taken as one of the sources of the many problems that Latin America has experienced since its republican creation.

The eighty-four-year-long life of this teacher from Caracas is divided according to Rumazo González (2005) in four clearly differentiated stages:

- a quarter of a century in Caracas;
- another quarter, in seven European countries;
- a third period of seven years, from his return from the “old world” to Bolívar’s death;
- and another quarter at the end of the century, in which he published his work.

According to this Equatorial humanist, there are no gaps in his existence, even if he traveled a lot. The periods signal the force of a plan which developed in a stringent unit, all hostilities, poverty and adversity subjugated. He worked endlessly, discovered, innovated, created, knew by intuition and foresaw the future one hundred years in advance. But nobody seemed to have understood him and, therefore, his giant drama. Briceño Porras (2005) writes about Rodríguez: There are ideas he expresses analyzing his own problems that are not from the present time, even if they are modern, and not in fashion, even if they are new: “For teaching more of what everybody learns, few have understood me, many have despised me and some have even taken the time to offend me” (Rodríguez’ words quoted by Briceño Porras, 2005: 32). From the age of twenty until the age of eighty, this Venezuelan teacher taught almost without interruptions.

One hundred and seventy-nine years ago, Rodríguez (1975b) described the first Project of Popular Education [1] in the then recently created Republic of Bolivia, in the following manner:

The project of Popular Education has the misfortune of resembling what in several places has been started with this name — and it is practiced in different ways, with a small number of individuals, especially in the big capital cities. All the institutions are made out of pity...Ones for “expósitos”[2]—Others for orphans—Others for girls from noble families—Others for military sons—Others for handicaped. In all of them it is clearly stated: they were not made for the greater good but for the founder’s sake or for the Sovereign’s ostentation. The Establishment, started in Bolivia, is social, its combination is new, in one word it is THE REPUBLIC: there is in what is seen in the others, because it is a masterpiece — there are men, who are the subjects —agents, who are the workers

—places where the work is done, which are the workshops —Principal, who is the teacher —and Inspector (the Government) which is the owner. All the clocks have wheels and springs and they are not the same. (: 55)

Simón Rodríguez states the sense of Establishment and the sense of Republican. He (1975b) expresses:

If the Government of Bolivia, in the year 1826, had taken the time to examine the plan, it would have known its importance; If it had demanded from the ones who disapproved the reasons it should stand for and forced into silence those who opposed it with frivolous excuses, the High Peru would be nowadays an example for the rest of the Americas; truly new things might be seen there:

- a. A fund, directed to what everybody calls welfare, raising instead of decreasing.
- b. A low People, condemned (like everywhere) to misery and disorder, transformed into decent people.
- c. A military force composed of 12.000 young people (at least) with no costs to the public treasure, armed and their hands filled with work and paying a personal contribution to the State instead of requiring a salary.
- d. In the four years passed from January 1826, when the Establishment started, there would be (at least) 25.000 busy people (with property as a consequence) educated in their moral and social duties (consequently, republicans and adhering to the Government), the fields would be cultivated, and the farmers would have well built furnished and clean houses, they would be decently dressed, they would amuse themselves wisely and, they would understand about society ... In one word, they would be citizens.

It is undeniable that some might lose in the change. The donkeys, bullocks, sheep and hens would belong to their owners; from the new people you would not get servants for the kitchen or to carry the rugs behind the young ladies; entering the cities, even if they were artisans, they would not allow them to be held by their necks, to go clean the stables for the officers, or sweep the public squares, or kill dogs; the gentlemen of the cities could not get little Indians for the priests, since the muleteers would not sell them on the road... The rest is known by the tenants of the lands. (: 58)

In this quotation, *Rodríguez* in his visionary role presents the proposal of endogenous development. *Subirats* (1981) emphasizes the concept of popular education around three suppositions:

1. Economical implications: *Rodríguez* talks about fund increase in “what everybody calls welfare”, Young people “with no cost to the public treasure” and “paying a contribution to the State”, about “the donkeys, bullocks, sheep and hens belonging to their owners”, about “new people not being servants” and no personal services would be imposed (sometimes done with the help of priests).

2. Social organization: a youth military force was foreseen “armed and their hand filled with work”, it might have happened that “the fields would be cultivated, and the farmers would have well built furnished and clean houses”.

3. Attitude changes: the low People, condemned (like everywhere) to misery and disorder, transformed in decent people, they would be people “educated in their moral and social duties” and “in one word, they would be citizens” (: 221)

In 1828, Simón Rodríguez reveals the main ideas that he shared with Simon Bolivar about the education for work of the new generations as well as the conviction that in the new South American republics “children should be accommodated in comfortable and clean houses, with rooms as workshops and equipped with instruments and directed by good teachers” (Rodríguez, 1975b: 52). Herein Rodríguez explains

The intention was not (as it was thought) to fill the country with rival or miserable artisans, but to educate and accustom men to work in order to make them useful, give them lands and help them to the establishment... It was to colonize the country with its own inhabitants. Instruction and occupation were offered to women so they did not have to prostitute themselves out of necessity or marry just to guarantee their survival. (:53)

And in them, the teachers would have the responsibility of “making the children know the value of work, so they can appreciate the value of the results”. According to Gomez Gutierrez and Alonso Rodríguez (2007)

The most amazing aspect of these theoretical statements is the fact they were produced twenty years before the publishing of the Communist Manifest, the programmatic document in which the revolutionary philosophers Karl Marx and Friedrich Engels, not only proclaimed the need of establishing a free and public education for all children and the abolition of childhood exploitation, but proposed an “education regime combined with the material production” from which “educate in and for work”, became a pedagogical principle and an expensive aspiration of the socialist education. (: 109)

Simón Rodríguez’s intellectual and visionary ability makes him one of the theorists who transformed Western European thinking and proposed an epistemic purge as shown in *Rodríguez* (1975b) in a text published in 1830:

America is called (IF THOSE WHO RULE IT ARE ABLE TO UNDERSTAND) to be the model of the good society, with no more work to adapt. Everything is done (especially in Europe). Take the good – leave the bad – imitate wisely – and for what is missing INVENT. (: 51)

Professor Simón Rodríguez insists, ten years later, in his spirit of decolonization:

The PUBLIC INSTRUCTION in the XIX century asks for more philosophy that the general interest claims for a reform and that America is called because of the circumstances, to start it daring paradox may seem... it does not matter...the facts will prove, it is an obvious truth that America must not IMITATE submissively but be ORIGINAL (: 51)

For Rodríguez (1975b) there is nothing Europe has to teach the Americas, what these need has to be found within their own reality. The current political ideas sustained by Europe are no other than their urge for domination over other people which escape their influence. For this reason, they spread ideas such as the superiority of a race towards the inferiority of others. Ideas about some people representing civilization and some other people sank in the barbarism. Europe has also spread the idea that the Latin people may only be ruled by despotism. "The great work of Europe was made with no plan, it was built by pieces, and the improvements have been piling up, not by imposition; the art shines more in the skills than in the matching; the most sublime things mixed with the most despicable ones make a contrast...beautiful, for the perfection of the parts; but unpleasant, for the inappropriate of the whole" (: 65). And he adds, turning the criticism even more severe: "Never will Europe reform its morals as it reforms its buildings: the modern cities are a model of taste and comfort (...), but the inhabitants are always the same, they know better than before, they do not do better" (:65).

If the Congresses achieve the colonization plan proposed by some people interested in the luck of homeless Europeans, and in the success of the new Republics, Americans will have the pleasure of having drawn... for leisure of their children... a more lively picture than the one presented by Europe: that one is natural and simple—this one?!... it will be embellished with new *Characters*— decorated with Indi and African *arabesques* and colored with the different tones from the earth...; ¡what a beautiful SOCIAL CARICATURE!.... Leave for the reader, the satisfaction of enriching it with episodes that his imagination may suggest.....if it can be fixed. Men from other times, who are unable by nature, or who have been damaged by education, may not be recommended either for what they know or for what they must want to be done: recommend yourselves.... make yourselves respectable... which is more protecting than what should be done.... COLONIZE the country with.... its OWN INHABITANTS and have DECENT COLONISTS, EDUCATE THEM in their childhood. (:66)

Simón Rodríguez was one of the most influential critics of pedagogy, and a fundamental contributor to what is nowadays known as Critical Education in Latin America. To Molins Pera (1998: 232) the first school should provide a social education since this one will allow “the making of a prudent nation”, a body education (physical) “to make it strong”, a technical education “to make it expert” and a science education “to make it thinker”. Education and instruction, in Simón Rodríguez thinking, were related in the society-school environment with a total and integrating dynamic. This relationship, according to Murguey (2004), makes it possible that education and instruction are “vital and human needs” for the construction of the society and the stability of its institutions, among them the school, and at the same time, society and school are agents [3] which drive and guarantee education and instruction that must be complete and non-exclusive, so that there might be social, moral and productive life and in order to have citizens. For Rodríguez, the teacher must be able to teach, to learn and help to understand. This

great educator considered essential the learning of Logic, Language and Mathematics as well as civic and religious education (Molins Pera, 1998). This author comments that

The politico-educational conception of Simón Rodríguez may be placed among the “utopian socialist” thinking. Besides, education for civil society was also a proposal of other authors (For instance, Horacio Mann). Moreover, Rodríguez de Campomanes, Pestalozzi, Fichte and Adolfo D. also promoted the education in (or for) work. (:242)

And precisely about Mathematics, perhaps one of the best examples of **Critical Didactics of Mathematics** comes from 1840 and it is due to Rodríguez’ genius. This pedagogue was appointed by Simon Bolivar as General Director of Public Teaching in Bolivia. Rodríguez stated that “the Americas are not to imitate submissively, but be original” and that “the country must be colonized by its own inhabitants”. These conceptions pushed him to structure an interesting educational experience in the *Model Schools* in Sucre where girls and boys had the possibility of learning arts and occupations in a theoretical and practical way.

The idea of Republic for Rodríguez (1975b) is the result of many *combinations*: it is the most simple expression that the *study of man* has reduced all the *social relations*. His formula is:

$$\text{PEOPLE} \quad \times \quad \left\{ \frac{\textit{Particular interests}}{\textit{Particular interests}} \right\} = 1 = \text{REPUBLIC}$$

It is necessary to tell those who do not understand calculus how to read this formula — and it is read so: People multiplied by particular interests and divided by particular interests equals one, equals Republic; and for those who the language may seem dark, the speech will be widened by saying that men meet for their interests, that everyone is looking for their own benefit without taking into account the benefit of others, cause the end of the union, because their interests crash into each others. This is the reason for all conflicts and these, the cause of wars that the lights acquired by experience have made think—that thinking it has been discovered, that everybody thinks in the greater good and that this greater good is the Republic. With no knowledge, man does not come out of the circle of brutality and, with no social knowledge, he is a slave. The one who rules people submitted to this situation, becomes brutal with them. Believing he rules because he orders already proves he thinks little. To maintain that, only because of the blind obedience, government survives proving he does no longer think. (:111)

The Critical Mathematics Education is a pedagogic, didactic and curriculum conception which humanizes and socializes Mathematics so that it can play a leading role in the development of deep processes of political and social consciousness. Through this, reflexive, argumentative, critical and decisive human beings who understand and develop their skills and abilities are formed to make it possible to

have constructive and participative performance within the collective to which they belong.

In the three first lines of this quotation, Rodríguez recurs to didactics. When he explains in a critical way that “men who meet for their interests, look for their own benefit without taking into account the benefit of others, cause the end of the union, because their interests crash into each others” he is socially applying the neutral element in multiplication (or symmetric element) in the best style of critical pedagogy and Critical Mathematics Education. Then, he emphasizes the criticism in his didactics when he insists on his explanation “This is the reason for all conflicts and these, the cause of wars that the lights acquired by experience have made think—that thinking it has been discovered, that everybody thinks in the greater good and that this greater good is the Republic”. A whole lecture written 83 years before the Frankfurt School was founded.

In 1794, Rodríguez presents his reflections at Caracas City Hall, on the flaws which spoiled education and how the first curriculum for elementary school in Venezuela should be dictated. It was about a critical treaty on colony teaching. In the next quotation Rodríguez (1975b) emphasizes the importance of geometry learning and teaching and criticizes the colonial didactics used at that time.

The need in which some People are of knowing what LIGHTS and SOCIAL VIRTUES are, People which believe they are JUDGES of their social fate and OWNERS of that of their children. (...). It is impossible to find someone who denies that the ignorance of the social principles is almost general. Who does not know it is a providence to the government, whatever its shape is, or does not convey in that to make real institutions of general interest, his knowledge must be general. Then, get used to the man who has to live in Republic, to seek from his childhood, **reasons and proportions** in what can be exactly measured so that through them, he learns to discover **reasons and consequences** in the providences and procedures of the government, for him to learn how to approach the moral infinite: so that his probabilities are not gratuitous or his opinions imposed. Therefore, it is said that GEOMETRY rectifies REASONING. The lack of Logic in the Parents, of Jealousy in Governments, and of Bread in the Teachers make the children waste their time reading with no mouth or sense, painting with no hand or drawing, calculating with no extension or number. Teaching is reduced to annoy them by telling them, ar every moment and for years, so—so—so and always so, without making them understand why or what for. They do not exercise the faculty of thinking, and they are allowed or forced to spoil the tongue and the hand. (:98 and 99)

Rodríguez postulates on *the political historical construction of free citizens of the Americas*, implies the possibility of developing a republican pedagogy, an original project for the upbringing of free citizens. For Rodríguez, the historical and political being is made through the interaction of subjects within different power relationships: free cooperation, solidarity and the greater good or collective goal of which he is individually beneficiary. The human and socio-critical character is present when he

expresses "*think of all so that all think of you*" (Rodríguez, 1975b). His pedagogical proposal has an ultimate goal: "feeding the hungry, dressing the naked, hosting the pilgrim, curing the sick and distracting the sad from his sorrows" (Rodríguez, 1975a).

RODRÍGUEZ' IDEAS NOW AND TOMORROW

I have pointed to some important characteristics of the ideas of Simón Rodríguez that have a value for thinking about education and mathematics education in the context of Latin American societies nowadays. I will shortly summarize some of them and comment on how I see them having relevance in the current project of construction of a new education in Venezuela.

1. Education as a means of moving away from a colonial past.
2. Education is a political activity that allows connecting individuals with their social and collective environment.
3. Education is a critical activity
4. Mathematics education is....

NOTES

1. In the book *El Libertador del Mediodía de América y sus compañeros de armas defendidos por un amigo de la causa social* (published in Arequipa in 1830), Simón Rodríguez includes "Notes on the project of popular education". He points out some considerations concerning educational matters, his performance as a teacher in the Gran Colombia and the application of the Project of Popular Education.

2. Rodríguez was expósito, it meant an illegitimate son. The "expósitos" were born in the secret of the family and were abandoned secretly too, usually carrying a note which indicated his caucasian condition so that he would not lose social quality.

3. Independent Agents: the school, in making the man in the social behavior to live in society and the society, in supporting and founding the school for everybody.

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