

THEOBALDO MIRANDA SANTOS AND THE METHODOLOGY OF TEACHING ARITHMETIC

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ABSTRACT

This article presents considerations regarding the methodology of the arithmetic teaching presented on Theobaldo Miranda Santos' book entitled *Noções de Metodologia do Ensino Primário*. The analysis of this book uses contributions of cultural history as well as Choppin's ideas, and covers other aspects beyond its mathematical content. The dialogue with normative texts contemporary to the book approached the guidelines in the book with official determinations. This may be the key to a long editorial life that reached nearly two decades of this book, which is part of the Collection entitled *Curso de Psicologia e Pedagogia* published by the Companhia Editora Nacional.

Keywords: Arithmetics; Methodology; Textbook; History of mathematics education; School Groups.

RESUMO

Este artigo apresenta considerações sobre a metodologia do ensino da aritmética presente na obra do autor Theobaldo Miranda Santos intitulada *Noções de Metodologia do Ensino Primário*. As análises desta obra utilizam aportes da história cultural, bem como as ideias de Choppin, e abrangem outros aspectos para além do seu conteúdo matemático. O diálogo com textos normativos contemporâneos à obra aproximou as orientações presentes no livro com as determinações oficiais. Possivelmente esta possa ser a chave de uma longa vida editorial que atingiu quase duas décadas deste título na Coleção *Curso de Psicologia e Pedagogia* da Companhia Editora Nacional.

Palavras-Chaves: Aritmética; Metodologia; Livro didático; História da educação matemática; Grupo Escolar.

1. General Presentation

The research on the history of mathematics education is a strong field in development. It is formed neither independently, nor in an autonomous manner; rather, it is a deeply interdisciplinary activity. It has its most important intersections at least with the history, history of education, sociology and history of mathematics (Schubring, 2014).

During the republican times in Brazil, considering the period of the institutionalization of the public education of the masses, in the late nineteenth century, we observe the implementation of a new model of school organization called 'School Group', which appears as a modern response comparing to earlier times marked by an archaic representation of the legacy of monarchy, the former political-administrative regime.

The interest in the constitution of mathematical elementary knowledge in primary school has driven many ongoing research projects in several Brazilian states, among which can be highlighted, at national level, the thematic project, supported by CNPq, entitled "The Constitution of Mathematical

Elementary Knowledge: Arithmetic, Geometry and Drawing in primary school in historical and comparative perspective, 1890-1970". Similarly, in a local level, an ongoing research project "History of mathematics teaching methods in primary schools of Santa Catarina, read in official documents and in textbooks of Arithmetic, 1911-1970", also with financial support from CNPq. Particularly this article is part of a group of other publications as partial results of these projects.

More precisely, this article aims to contribute with mathematics research in the primary level in primary schools in Santa Catarina, as well as investigates the methodological orientations present on the teaching of arithmetic in the book of Theobaldo Miranda Santos's *Noções de Metodologia do Ensino Primário* in times of primary schools. Furthermore, this article will present some elements of that work in teaching of arithmetic at primary level.

2. Initial considerations

In Brazil, the School Groups were created in response to a more rational and productive model of school organization of the newly established republican government in the late nineteenth century. The school graduation and classification of students emerge as clear elements for pedagogical organization of the primary school. The increase of the urban population imposed an action of government to handle with the increasing number of children in major centers being formed. The dispersion of primary classes installed in different buildings was a challenge. In fact, the School Group model is an economic advantage since a group of children in the same school building is also a measure of cost rationalization and control. The School Groups were instituted, initially in São Paulo, by a legal artifice, i.e., in the presence of more than one school in the compulsory education radius, the government allows these to work in buildings that were adapted or constructed for this purpose (Costa, 2011).

According to Silva & Teive (2009), Santa Catarina School Groups were created based on the São Paulo model, during the public education reform of 1891, in the government of Jose Prudente Moraes Barros (1841-1902). With this reform, the state of São Paulo showed to all the Brazilian nation how to construct a popular school and "lent" their teachers to expand throughout the country the symbolic ferment for the modernization of education: the intuitive method or lessons of things, which, it was said, had been transforming the destiny of societies everywhere.

Santa Catarina, similarly to what happened with other states of the federation, took advantage of the new São Paulo experiences in the field of school education and hired Professor Orestes Guimarães to modernize its public education. "The sower of the new" as he became known, found in the 1910s a state and, in particular, a capital city whose elite struggled to modernize and civilize itself according to the bourgeois model, and, therefore, received from the state government all powers to intervene in the education system so as to extinguish "old colonial habits", putting Santa Catarina on the road of civilization and progress (Teive, 2008, p.191-192).

According to Silva & Teive (2009), the School Groups should adapt Santa Catarina people to the civilizing project that had in the school of masses of the nineteenth and twentieth centuries one of its most important institutions through a curriculum inspired in the assumptions of the Modern Pedagogy. The first School Group deployed in Santa Catarina constituted a cornerstone for the consolidation of the public school system, although this model was based on an urban school form (Silva & Teive, 2009).

The Santa Catarina School Groups were established in 1911 during the government of Vidal Ramos. Between 1911 and 1913, seven School Groups were opened in six cities. The first, in 1910,

"Grupo Escolar Conselheiro Mafra" in the city of Joinville. Later, in 1912, two School Groups are established: "Grupo Escolar Jerônimo Coelho" in Laguna and "Grupo Escolar Lauro Muller" in Florianópolis, the state capital of Santa Catarina. In 1913, four more School Groups were opened: "Grupo Escolar Vidal Ramos" in Lages; "Grupo Escolar Silveira Souza" in Florianópolis; "Grupo Escolar Victor Meirelles" in Itajaí; "Grupo Escolar Luiz Delfino" in Blumenau. After an interval of five years, other School Groups were opened, including the "Grupo Escolar Hercílio Luz" in Tubarão, founded in the mid-1920s. The "Grupo Escolar Lauro Muller", was the first institution built in the capital of Santa Catarina that followed the medical hygienists provisions, which already appeared in this kind of design for schools in other Brazilian states as well as abroad. Opened in 1912, with great pomp and architectural beauty, the establishment had big and bright classrooms, imported furniture, double school desks, physics and chemistry laboratories, school museum, natural pedagogical charts and didactical materials considered indispensable to the practice of the new (intuitive) method, which aimed to spread in School Groups (Prochnow & Auras, 2006).

The Brazilian federal government holds responsible for issuing new national guidelines on primary and secondary education, after the first phase of implementation of School Groups carried out by the different states of the federation in the late nineteenth century, early twentieth century. In full economic and political reorganization in the context of industrialization and urbanization, the Organic Laws of education are discussed and issued. The Federal Decree n. 8529 of January 2nd, 1946 will then regulate the Organic Law of Primary Education, dividing the school system in primary and supplementary (Brasil, 1946).

The Programme for Primary Education Institutions of the State of Santa Catarina, issued by Decree no. 3732 in December 1946, was part of the restructuring of this state education system proposed by Professor Elpidio Barbosa, whose main purpose is to adapt the state education system to the standards of the Organic Laws Federal instituted in January 1946.

Later, with the promulgation of the Law of Directives and Bases of National Education, n. 4.024 of December 20th, 1961, the obligation of the government with the curricular organization of primary education becomes definitive, extinguishing the School Groups (Arruda; Flores & Brigo, 2010).

In a prospecting visit made in the files of "Grupo Escolar Lauro Muller", in Florianópolis, capital of Santa Catarina, a copy of the textbook *Vamos estudar? 4a. série primária* (1965, 86th. Edition) written by Theobaldo Miranda Santos was found. Associated with this book, Zimmer, Boldo & Costa (2012) analyze and infer the multiple insertion of Theobaldo Miranda Santos in the school public sphere as a renowned author of other works used in teacher formation. This book can also be found in the institutional repository of the Federal University of Santa Catarina (UFSC). Apart from this book in the collection of one of the early Santa Catarina School Groups, the Theobaldo Miranda Santos'books appear in the bibliographies of the most important state teacher formation courses.

A survey this author points out that Santos, due to his teaching in secondary schools, was himself the promoter of his own books: he maintained direct contact with his readers, who were students of the normal schools and colleges. He was recognized as an authority in education because of his books had theoretical and methodological arguments that were relevant and necessary for the teachers and provided great contributions to the teaching profession (Almeida Filho, 2008).

In fact, Santos was author of other collections, mostly published by Companhia Editora Nacional. His collections comprise a wide area of knowledge, focusing on education based on the thoughts and didactic and pedagogical theories, methodologies and teaching and learning practices that were

important in the teachers' training schools, as well as later in their professional performance (Almeida Filho, 2008).

According to Choppin (2004, 2008), the textbooks have served as a source of historical research since the 70s of the last century. This late exploration occurred due to difficulties linked to their purview, of which he cites four: a) the definition of the object, i.e. the difficulty of defining what a textbook is; b) few or rare productions that do not cover all the didactic production and periodicals, with only scattered articles on the subject; c) the lack of interest in publications on the textbook; and d) finally, the barrier imposed by the language.

However, such difficulties should not diminish the interest of researchers who wanted to understand the history of a given subject through the textbook. Therefore, the researcher Circe Bittencourt clarifies that the textbook is a "multifaceted" object. From the point of view as a cultural product, the textbook is materially connected to the publishing world and within the logic of the capitalist market, besides supporting knowledge and teaching methods, as well as carrying ideological or cultural values. (Bittencourt, 2004)

(...) the textbook is a contradictory cultural product that generates intense controversy and criticism from many sectors, but has always been regarded as a key tool in the learning process. The textbook provokes debates within the school, between teachers, students and their families, as well as academic meetings, in newspaper articles, involving authors, editors, political authorities, intellectuals from different origins. The discussions around the textbook are still linked to their economic importance for a wide sector linked to the production of books and also the role of the state as a control agent and as a consumer of this production. (Bittencourt, 2004, p.472)

According to Costa & Valente (2007), the analysis of contents and school practices of a certain level and period passes through the analysis of the textbook. Within a cultural and historical perspective, such analyses can be incorporated into other of larger and different dimensions as an effective possibility to reveal past school practices. Following the conception of Valente (2001), the mathematics has become a subject that has its history linked to textbooks. Since its origin, as technical-military knowledge, until becoming school general culture, the historical trajectory of constitution and development of school mathematics in Brazil can be read in textbooks. Therefore, the textbooks are considered sources for researches.

In addition, according to Costa (2010), the textbook of mathematics should be studied beyond the content that is displayed. The analysis of the contents alone are not capable of serving the purposes of elaborating a History of Mathematics Education.

3. Theobaldo Miranda Santos, the autor and his books.

Almeida Filho's thesis (2008) entitled "The Catholic strategy of production and circulation of Theobaldo Miranda Santos' editorial collection" has plenty of information about this author, highlighting the many collections of his own throughout his career as an author of textbooks. From the cultural history perspective, Almeida Filho research operates with the study of the collections in its materiality considering the strategies of production, circulation, appropriation and imposition of the catholic model as educational political project.

Theobaldo Miranda Santos (1904 - 1971) was an intellectual joined to the Education of Science. He was born in Campos, Rio de Janeiro, in 1904. Later, he began his studies in Humanities Lyceum and at the Official Normal School, where he completed his primary and secondary schools, in 1920. He began the course of Odontology and Pharmacy at the Grambery Methodist College, in Juiz de

Fora, and then he started teaching as a professor in the Manhuaçu's Normal School, also in Minas Gerais. By 1928, he returned to Campos, where he taught Physics, Chemistry and Natural History classes in the Humanities Lyceum. In the same period, he taught history of civilization in a famous catholic school. In the same county, he became professor in the College of Agriculture and Veterinary School, teaching Natural History as well as taught Orthodontics and Odontopediatrics at the School of Pharmacy and Dentistry (Almeida Filho, 2008).

From Santos' professional profile, one can infer how his productions circulated. According to Almeida Filho (2008), Santos' books earned the teachers training course market. Any format of the books that made up the collections was produced according to precise and well defined editorial strategies.

From the several books published for teacher training, three titles that are related more directly to the teaching of mathematics can be highlighted. Presented in the collection "Curso de Psicologia e Pedagogia" and published by Companhia Editora Nacional, namely: v. 7 - *Noções de Didática Especial* (1960); v. 9 - *Noções de Prática de Ensino* (1949?); and, v. 10 – *Noções de Metodologia do Ensino Primário* (1948?)¹. The dates refer to the year when the first edition of each book was published. (Almeida Filho, 2008)

This article focuses on aspects of teaching of arithmetics present in the book *Notions of Methodology of Primary School* (Santos, 1962).

4. Notions of Methodology of Primary School

According to Almeida Filho (2008), this book had an editorial life of about twenty years, with the first edition published in 1948 and the last, 11th edition, in 1967. An exemplar of the 9th edition, published in 1962, was used for the analysis presented in this article. The presentation of the book in the Preface indicates that it meets the composition of a specific subject in the course of Normal Schools, and complements its collection which was being elaborated in that period:

In the exemplar analysed (9th edition), located in the Library of Educational Sciences Center of the Federal University of Santa Catarina, the author explains that this book was intended and written for students of the Normal Schools and others educational institutions. According to the author, this book has a concise and elementary structure, and presents problems of what he calls modern teaching methodology. (Santos, 1962)

This book is divided in two parts. In the first part it contains the chapters called General Methodology, Pedagogical Methods, Evolution of Pedagogical Methods, Classification of Pedagogical Methods, Teaching Processes, Teaching Methods, Teaching Modes, Teaching Materials, The Lesson, Active Methods and the New School Methods. In this part, a more general view about the overall didactic and methods are presented. In the second part, the chapters presented are General Methodology, Methodology of Writing, Methodology of Oral Language, Methodology of Arithmetic, Methodology of Geometry, Methodology of Geography, Methodology of History, Methodology of Natural Sciences; Methodology of the Handcraft and Methodology of Design Education. From this second part, the author puts the field of teaching in various reference subjects.

¹ The titles originally written in Portuguese will be translated in this paper. v. 7 - *Noções de Didática Especial* (1960) – Notions of Special Didactics ; v. 9 - *Noções de Prática de Ensino* (1949?); - Notions of Teaching Practices and, v. 10 – *Noções de Metodologia do Ensino Primário* (1948?) - Notions of Methodology of Primary School

Mathematics is present in the second part of this book, in the two chapters that address the teaching methodology of Arithmetic and Geometry. In both chapters on this content the general characteristics, a brief account of the history, the value of education, the aim of teaching Arithmetic and Geometry, the techniques and teaching practices, the motivations and the possible materials to teach them can be found.

4.1 The Arithmetic in the book *Notions of Methodology of Primary School*

The methodology of Arithmetic in Santos' book is approached in two major rubrics. In the first one the author describes elements of its history, the value of its teaching in formal school, discusses and analyzes its goals. In the second one, the author discusses topics related to educational processes that privilege arithmetic operations in a logical order, i.e., addition, subtraction and multiplication. The division is treated together with the fractions. Then, Santos' approaches the practice, the motivation of study and the arithmetic teaching materials. Finally, the General Recommendations regarding the practice of teaching issued by the General Department of Education and State Culture of the state of Guanabara are presented.

It is worth mentioning in Santos' book the impact of the dissemination of the Arabic numerals that motivated the abandonment of the intuitive processes employed until the sixteenth century, either with the Roman abacus, the fingers, stones or other objects. The universal use of the symbolic method was hegemonic until Pestalozzi times, when the psychological process is adopted, by which children form the notion of number. Until then, the school taught mechanically to count, read and write abstract quantities and perform operations to compose, decompose and compare numbers - a dogmatic and symbolic method constituting a real torment for children, in the author's words.

For Santos (1962), there was what he called exaggeration when overemphasizing the importance of the mental calculation, making the study of arithmetic a formal exercise, executed with numbers, without taking into account the needs of the social and economic life.

Two trends can be inferred from the text: one led by Pestalozzi's disciples, and other, by the ones who opposed his ideas. Some of Pestalozzi's followers sought to meet the demands of economic life, but firmly maintained the principles of intuition, and formal education provided by the Arithmetic. The opponents disagreed with the ways of calculation processes as well were against its strictly formal goal. The latter group encouraged the utility aspect of the applications of arithmetic. In the polarization of the positions about the applications of arithmetics, Santos (1962) also indicates those who sought to reconcile both trends, the utility aspect and the formal one.

From the late nineteenth century, the teaching of arithmetic takes an eminently psychological and experimental guidance. According to Santos (1962), there is a trend that is concerned with the simplification and objectification of their teaching, relating it to the psychological characteristics of the child, represented by the experts Mc Mellan, Dewey, Klapper and Thorndike.

Similarly, another historical trend evidenced in the text of this book is the one associated with the renewed education systems as Montessori, Decroly, methods of projects, the Dalton plan and the Winnetka method, applying globalized learning processes, articulating them with the game and interests of childhood.

Then, the author addresses important points that deal with the value and goals of the teaching of arithmetic. From the assertion that the arithmetic is engaged in the study of numbers, their

properties and operations, the learning of arithmetic can distinguish a formal or educational value and a material or practical value. This formal value is recognized since ancient times, even in the times of Greek philosophers like Pythagoras and Plato, when it was stated that the number was the essence of the universe. This understanding was modified by psychologists and contemporary educators because they underscore the little influence of mathematics on the formation of the child. Santos (1962) quotes the author Adolfo Rude who indicates that the arithmetic for elementary education is seen as a technique. And as such, it has a mechanical aspect to be acquired and obtained by development as well as it has a rational aspect that lies on the logical foundations and its implementation. The application of arithmetic assist in the formation of good organization habits.

Santos indicates five aims of the teaching of arithmetic for children, in the following order:

- 1st.) Provide them with an instrument to address the issues of numbers and quantity.
- 2nd.) Provide them with knowledge of numbers and their combinations, aiming at solving the practical problems of everyday existence.
- 3rd.) Make them get used to analyzing and solving these problems.
- 4th.) Train in them, through the study of matter, useful habits of thought and action.
- 5th.) Teach them the agencies and economic institutions of the social environment. (Santos, 1962, p. 169-170)

Santos' book states that the teacher should make his/her didactic approach by taking real situations of the children's lives and link them into their practice. The arithmetic thus becomes useful in their future applications across the needs that may arise.

In fact, the Mathematics Program of the Department of State of Guanabara Education states:

Mathematics in primary education is less a science whose knowledge has value in itself than for the use we give it in resolving issues presented in practical life. Mathematics is primarily a tool that the child can apply in other school projects, including the knowledge he/she will acquire from other subjects.

The need for mathematical knowledge arises when we need to evaluate costs, know a number of objects, recognize or use forms, determine dimensions, surfaces or volumes, etc. Their teaching, therefore, should be provided making use of real life situations, using direct or indirect problems of life itself. This is a basic principle in order to develop the interest that is essential to the integration of the student in the work that he/she is doing. So it follows, among others, the recommendation not to use as subjects for school exercises any long, unreal and strange examples that does not meet the needs of children. (Ministério da Educação e Cultura, 1962, p. 18)

For Santos (1962), the teaching of arithmetic should have as its main task to make the calculation diffuse in all the actual circumstances of life, in order to teach children the quantitative knowledge of the world. The external experiences, for example, like the preparation of trips, excursions, or even the care with school gardens present a great amount of different kinds of arithmetic problems.

Linking the teaching of calculus motivated by real situations, it is possible to avoid the failures in the teaching process revealed by situations when the students can do written calculations, but do not know how to apply them in real life, that is, without understanding their utility purpose.

The State Decree n. 3732 (Santa Catarina, 1946) indicates, for teaching elementary arithmetic of primary school, the exploration of the use of manipulative unstructured material such as wood lathes, toothpicks and grains, approaching the guidance given by Santos.

The concrete materials provide valuable service helping the children to solve not only difficult numerical problems, but also small problems. Indeed, these materials should be used as soon as the

child starts to learn arithmetics. The writing operation must be a resource used only when the children can not calculate the operation mentally.

Thus, Santos (1962) states that the teacher should preliminarily lead the child to solve problems orally. The writing is presented as an extension to the exercise. The accuracy and speed (mechanization) must go along with understanding (reasoning).

Both aspects are equally essential: to understand why it is executed (reasoning) and to execute it quickly and accurately (mechanization). Mechanization can only be achieved by training; only the repetition ensures its effectiveness (learning law). But there must be systematization concerning the difficulties and speed of exercises. The same exercise must, sometimes, be repeated, with varied presentations, to make sure that it has been memorized, without causing boredom to the child, since the professor is going to use the means already suggested. (Santos, 1962, p. 173)

4.2 Arithmetic operations

The practical standards for the teaching of basic arithmetic operations for Theobaldo Miranda Santos are based on the text "*Como se ensina aritmética?*" of Everaldo Backheuser (1946). The latter presents in his book the results of experiments conducted by Arthur Mueller, who set out to investigate the psychological types of students in relation to mathematics. He called Type T - theoretical; Type M - mechanizer; Type A - active. Yet for him, there are two others: F Type - fantasist; and Type R - refractory.

Since the early years, students belonging to the T type take pleasure in diving into the calculations, and when required to memorize the multiplication table, they soon try to achieve for themselves the "laws" that regulate the ranking of numbers on the tables of addition and multiplication. For the M type students, there is no boring problem that requires memorization. They do the same without reluctance. They are expert in mental answers to multiplication and division. They are directly associated with the use of memory and, therefore, the mechanization is one of their favorite tasks. However, the students of Type A are recognized by their objectivity and require strongly concrete materials to learn. The students who are in the Type F category are like the A-Type students, but deeply abstracts: they think of "great numbers", far from any immediate application. Finally, students who belong to the category of the Type R are those who dislike the "number". Their arithmetic skills are achieved only with a great effort of concentration. (Backheuser, 1946)

Based on this categorization, Santos (1962) describes the practical standards for the teaching of the basic operations. The guide describes that addition and subtraction must be taught simultaneously: gather units and diminish units. One must take special care and spend long time in training, since the perfect mastery of the sum operation will promote a faster progress with the others: the subtraction, because it is inverse, and the multiplication, because it is a repetition of additions. Santos (1962) also stated that the children must be taught, from the beginning, small problems that will be useful to Type T and Type A students. The repetitions of the sum of two different numbers shall be exercised by the students due to their utility practice. Adding to 2 on 2, 3 on 3, etc., the teacher will lead the class to multiplication.

The subtraction operation should be taught by either removing the units from a higher number until reaching the smaller number, or adding units to the smaller, until it reaches the highest. This second method, in fact, is more suited to Type A students who are based on the objectivity of the counting and on the material to subtract, for example, when "giving the change" during a purchase.

According to Santos (1962), the teaching of multiplication operation should not follow the order of the series of natural numbers and points at individualized guidance for the first cases. Santos suggests that the multiplication should start by 2, and supports his assertion through the concept of *even number*, which the students already know. Next, teach the multiplication by 4, showing objects in which this number is always present (feet of tables and chairs, quadrupedal animals, etc.). The multiplication by 10 is considered to be easy and should be given in the second or third class. Later, the multiplication by 5, as its multiples always end in 0 or 5.

One should start multiplying by 3 only after exercising multiplication by 2, 4, 10 and 5. Present some figures and objects (streamers, funnel, clown hat, etc.). Then take multiplication by 6 or, in his words, "half a dozen". This approach facilitates the teaching of multiplication by 12, what is justified because most products are sold by the dozen.

The calculation of multiplying by 7 must be associated with the days of the week. For this case the teacher could ask questions, such as: how many days do two and three weeks indicate? Thus, comparisons with the number of days in the month and the year with the weekdays are more useful and practical.

Rare in the daily life, multiplications by 8 and 9 should be the last to be studied. Then, the series of 11, which, although not frequent, is easily retained: 11, 22, 33, 44, etc.

Only after familiarization with all these calculations, the class should be also exercise the complete multiplication by tens (20, 30, ...), and then the multiplication by 15.

The guideline states that the teaching of the division operation, should be done together with the fraction. Earlier in this rubric, the author indicates that firstly the students must be given the notion of half (division by 2), then the decimal fraction, since the students have already learned the laws of the natural numbers. For this this purpose, one can use the meter as an example, divided into decimeters and centimeters. Using the presented idea, the class can do a number of measures with this type of fraction. Other measuring units, such as the liter, can also be used.

After extended practicing the divisors 2 and 10, the author suggests that the division of the time should be explored by using the clock: half an hour, quarter of an hour, three quarters of an hour. Similarly to dozen and a half a dozen. Then, after the notion of division is already known, the teacher should advance in the operations with the other divisors (5, 3, 6, 7, 8, 9).

5. Final remarks

Theobaldo Miranda Santos' book was used by the teachers in training, i.e., it was written in order to be used by the students of the Normal Schools. The Normal School program indicated by Decree Law 8530, 1946, in its Article 14 determines how the teaching methodology classes in these courses should be, namely:

- c) the methodology classes must have a systematic explanation of primary education programs, their objectives, articulation of the subject, indicating the processes and ways of teaching and also the review of their contents when needed. (Brazil, 1946)

Almeida Filho's thesis (2008) indicates the editorial life of the book *Notions of Methodology of Primary School* revealing its first edition around the year 1948, following until 1967, when it reaches its eleventh edition, i.e., a book that has gone through the 40s until the late 70s, when the so called School Groups were extincted – after almost twenty years of existence.

The contents of Santos' book (1962) refer to the Minimum Programs of primary education published by the then General Secretary of Education and Culture of the State of Guanabara, which established the following educational standards for arithmetic learning, described in four points a) general recommendations; b) recommendations on training in exercises and games; c) recommendations on using problems; and, d) correlation of mathematics teaching with the other school subjects.

Indeed, it can be seen the harmonic on this book concerning the norms issued by the legislation on aspects of the methodology, particularly the aspects of the methodology of teaching of arithmetic, the content of analysis of this paper. Such elements were verified and analyzed in Decree n. 3.732, 1946, which establishes the programs for primary schools in the state of Santa Catarina.

The elements exposed in this paper regarding the long period of existence of the book infer a possible explanation of its success. In addition, a complex editorial strategy on national circulation in agreement to the prescriptive requirements of federal and state laws are some of the reasons that emphasizes the success of this book.

These considerations about the book of Theobaldo Miranda Santos, *Notions of Methodology of Primary School*, open new windows for future research, which may extend the understanding of this author and his guidance on the teaching of arithmetics at primary level.

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