

**The textbook of Arithmetics and
1911 Public Education Reform in Santa Catarina, Brazil**

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ABSTRACT

In Brazil, the reformation of the educational systems developed after the republic proclamation, were influenced by the republican conception of modernization and nationalization. In the state of Santa Catarina, the 1911 Public Educational Reformation was effectuated following such conceptions as parameters, establishing a different educational system from the one applied so far. Starting with the primary teacher training, and the intuitive method as the cornerstone of the reform and control of textbooks and teaching materials used in schools, reformers have institutionalized their ideas. This article aims to analyze how structured the teaching of mathematics in the context of this reform, mainly related to the adoption of textbooks for teaching arithmetics, by analyzing a document submitted to the government of the state of Santa Catarina during the 1911 Public Educational Reformation, entitled “Opinion on the adoption of textbooks”. Seen as responsible for influencing teachers and students, textbooks were controlled and regulated as part of the reformation. The study of this document shows the problematic issues lived at that time, as well as collaborates with the writing of the History of Mathematics Education in primary levels in the State of Santa Catarina, specifically during this period.

Keywords: primary school, teaching arithmetic, textbook, school culture

RESUMO

No Brasil, as reformas dos sistemas educacionais desenvolvidas a partir da Proclamação da República, tiveram muita influência das concepções republicana de modernização e nacionalização. No estado de Santa Catarina, a Reforma de Instrução Pública de 1911 se efetivou tendo como parâmetro tais concepções, estabelecendo um sistema educacional diferente do até então praticado. Iniciando pela formação do professor primário, tendo o método intuitivo como pedra fundamental da reforma e controle sobre os livros didáticos e materiais pedagógicos utilizados nas escolas, os reformadores institucionalizaram suas ideias. Este artigo visa analisar como se estruturou o ensino da matemática no contexto desta reforma, principalmente relacionados à adoção de livros didáticos para o ensino de Aritmética, através da análise de um documento apresentado ao governador de Santa Catarina durante a Reforma de Instrução Pública de 1911, intitulado “Parecer sobre a adoção de Obras Didáticas”. Vistas como responsável por influenciar professores e alunos, os livros didáticos foram controlados e regulamentados como parte da reforma. O estudo deste documento mostra as questões problemáticas que foram vivenciadas naquela época, bem como colabora numa escrita da História da Educação Matemática nas séries iniciais no estado de Santa Catarina neste período delimitado.

Palavras-chave: escola primária, ensino de aritmética, livro didático, cultura escolar

Introduction

This article is a partial result of research that has been developed in the Pos-Graduate Program in Science Education and Technology of Santa Catarina Federal University, whose theme is the formation of elementary school teachers for teaching mathematics in Santa Catarina. This research has as its focal point the preparation of teachers to teach how to "count"¹ in the early years of the twentieth century. Therefore, this article seeks to reflect upon the adoption of Arithmetic textbooks, in the "Orestes Guimarães"² reform, by examining the "Opinion on the adoption of Textbooks" presented to the governor of Santa Catarina during the 1911 Reform of Public Instruction.

First, it is necessary to understand that in the late nineteenth and early twentieth century, the Republicans plan a different school, modern and higher quality, bringing to the population a set of knowledge (also of practices and social values) that were beyond literacy. The School Groups are concretized, and with them, the goal of quality education for primary school teachers, as they are the propagators of republican ideals. Nobrega (2003, p. 253) states that:

"School Groups can be understood, in general, as the first public elementary schools in Brazil that used a form of administrative, programmatic, methodological and space organization based on educational concepts type "modern"- which were already in use in some private schools at the time as the American School of São Paulo – founded in the ideals of rationalization, one can say economy school, dominant in Europe and U.S. in the second half of the nineteenth and early twentieth century".

In this context, reforms of the Normal Schools (school to training teachers) gain meaning as they corroborate with the spread of the ideals of modernization and nationalization. Teive (2008, p. 100) reports that the reform of public education in Santa Catarina, in 1911, began in the Normal School, due to the fact that local officials hailed that the whole basis of the investment should focus on primary teacher training, since they would be responsible for an entirely new school culture. The reformer Orestes Guimarães, in a report presented to the Governor Vidal Ramos said,

"I do not fear, and I will have with me all those who dedicate themselves to the questionings of this order, on bail: retire and reform, completely, education in its methods and processes; orient yourself in a technical sense, attuned to the theoretical observations of today's pedagogy and practice, the methods and primary education will be reformed naturally without hindrance, without obstacles and without fainting. The base is the Normal School." (Guimarães, 1912. p.37 *apud* Teive, 2008, p. 100).

With respect to public education reform in Santa Catarina, since the Law No. 846, many legal apparatus were deployed to regulate the government's objectives, especially in

¹ The primary school, known as the school of the first letters, will have its content defined as school of learning how to read, write and count. The four fundamental arithmetical operations are what is understood as "count" (Valente, 1999, p. 113)

² Orestes Guimarães, a teacher from Sao Paulo, was hired by the state of Santa Catarina to conduct the reformation. For his participation in the historiography of Santa Catarina education – this period is called "Oreste Guimarães Reformation" (Teive & Dallabrida, 2011).

1911 (Santa Catarina, 1980, p. 370), having relevance the following documents that are part of the analysis presented here: *Decree No. 585 of April 19th, which reorganizes the Public Education of the State of Santa Catarina, Decree No. 596 of June 7th, which adopts textbooks for use exclusively in public schools; Opinion on Adoption of Textbooks presented to Ex. Colonel José Vidal de Oliveira Ramos D. D. Governor of the State of Santa Catarina by the hired teacher Orestes de Oliveira Guimarães.*

A few considerations

The Reform of Public Education held in the state of Santa Catarina since the Law 846/1910, put into practice in 1911 by the commissioned teacher from São Paulo Orestes Guimaraes, brought major changes to education in Santa Catarina, be it in school reorganization or as instructional design, based on liberal and positivist ideals from the intuitive method.(Nobrega, 2003, p. 256).

"The intuitive method emerged in Germany in the late eighteenth century through the initiative of Basedow, Campe and Pestalozzi especially [...] consisted in the valorization of intuition as the foundation of all knowledge, that is, understanding that the acquisition of knowledge arose out of sense and observation" (Souza. 1998, p26).

Thus, in the context of reform, where the intuitive method of teaching is proclaimed as the focal point of all the action, the choice of books used in primary schools gain relevance as "such books perform functions of primary interest in the education of people, decided by the influence exerted on the teacher and student"(Guimarães, 1911, p. 3).

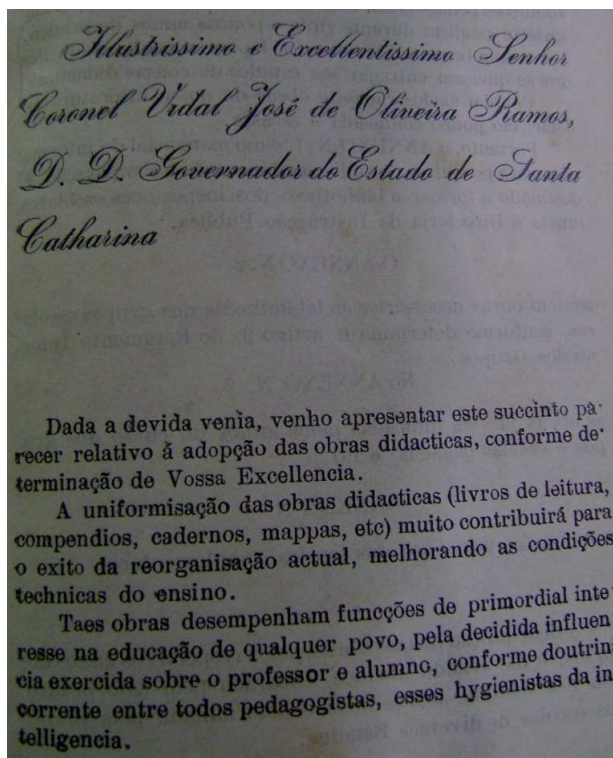


Figure 1- Introduction of the "Opinion on the Adoption of Textbooks " written by Orestes Guimarães in 1911 Illustrious Excellency Mr. Coronel Vidal José de Oliveira Ramos, Governor of Santa Catarina: Given permission, I hereby present this brief opinion on the adoption of textbooks, as determined by Your Excellency. The standardization of textbooks (reading books, textbooks, notebooks, maps, etc.) will greatly contribute to the success

of the current reorganization, improving the technical conditions of education. These books play a role of great interest in the education of any people, by the decisive influence over teacher and student, as current doctrine among all educators, these hygienists of intelligence.

But in this sense, what kind of value would the textbook have for this design? Is it just ideological or does it have a larger cause? Such considerations relate to the role of the textbook in society and its value in research, which may reveal "the extent of public sector policies and the actual situation of education in the country"(Fernandes, 2005, p. 123).

"[...] The textbook is an object of 'many faces', there are times that it is seen as a cultural product, and others as a commodity linked to the publishing industry and subject to the logic of the capitalist system. Sometimes it is seen as support to knowledge and methods from several subjects, and especially as a vehicle for ideological and cultural values"(Bittencourt *apud* Fernandes, 2005, p. 123).

Thinking about the role of textbooks in the context of the Republican time, the opinion written by Orestes Guimarães realizes that reform is understood and implemented as a full "package", that is, the reform should happen at all levels of education, as we have seen starting with the teachers, but also in the book used by teachers and pupils in primary schools that should be the foundation of education, having the government take full control of this apparatus, according to fragments below:

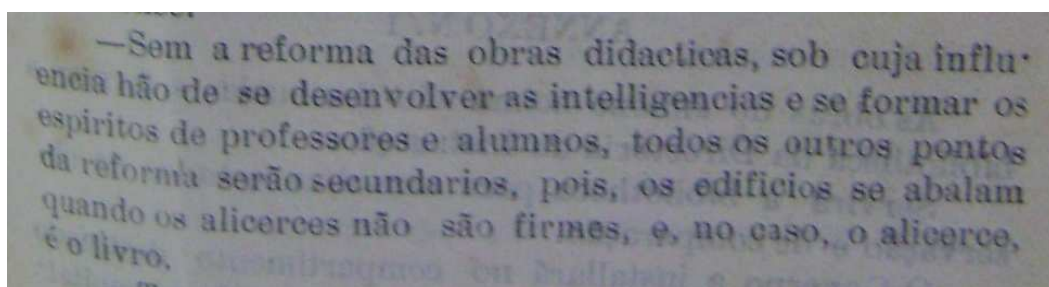


Figure 2 - "Opinion on the Adoption of Textbooks" written by Orestes Guimarães in 1911 - p. 11 - Without the reform of textbooks, whose influence will develop minds and spirits of the graduating students and teachers, all other points of the reform will be secondary, because the constructions will fall if the foundation is uneasy, and in this case, the foundation is the book.

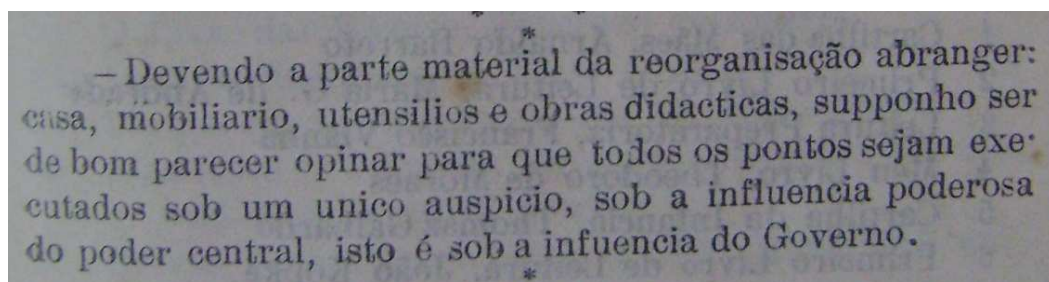


Figure 3 - "Opinion on the Adoption of Textbooks" written by Orestes Guimarães in 1911 - p. 15 - Should the material part of the reorganization include: home, furniture, tools and textbooks, I suppose it is of good advice to opine that all points run under a single support, under the powerful influence of the central power, that is, under the influence of the government.

Teive & Dallabrida (2011, p. 90) argue that Orestes Guimarães, when analyzing the textbooks used by the State of Santa Catarina before reform, would have found many books aimed at foreign cultures and that this was against his Nationalist Republican belief. Also, Orestes believed in "the decisive role in the education of people in solving problems within the Brazilian society "and that the school was to exalt man and things Brazilian" (Teive & Dallabrida, 2011, p. 90), considering, then that "textbooks should be operative in the expression of the curriculum implemented in Schools Groups" (Teive & Dallabrida, 2011, p. 91). This topic can be viewed in the following fragment, where Orestes Guimarães speaks about reading books:

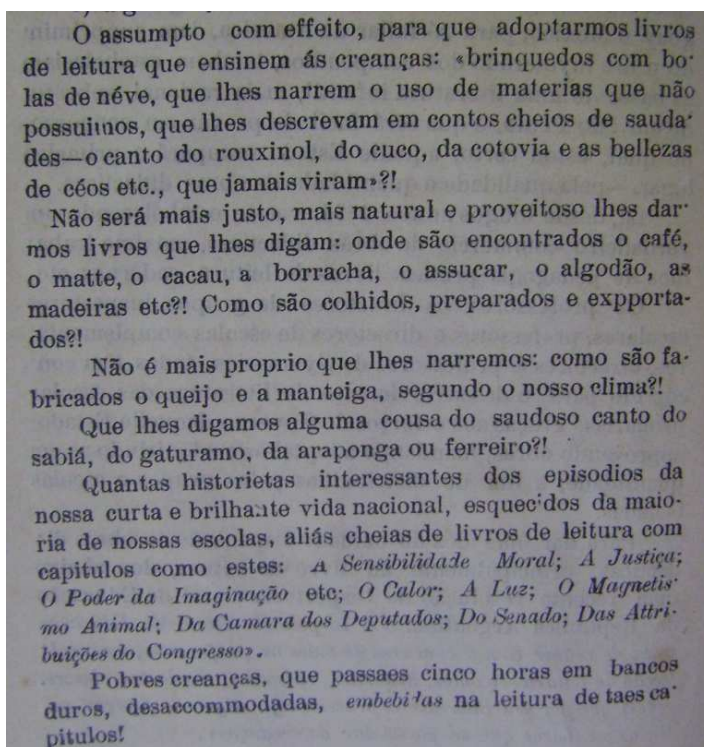


Figure 4 - "Opinion on the Adoption of Textbooks" written by Orestes Guimarães in 1911 - p. 8

Why adopt reading books that teach children about: toys with snowballs, that describe the use of materials that they do not possess, which they describe in tales full of longing - the song of the nightingale, the cuckoo, the skylark and the beauties of heaven, etc., which they have never seen?! There it would be more just, natural and useful to give them books that say, where is coffee found, mate, cocoa, rubber, sugar, cotton, timber, etc.?! How they are harvested, prepared and exported?! Is it not more appropriate that we tell them: how cheese and butter are manufactured, according to our climate?! They say something of the wishful singing of the sabiá, gaturamo, the arapongo or ferreiro³?! How many interesting stories of the episodes of our national life, short and glossy, forgotten in most of our schools, in fact full of reading books with chapters like these: The Moral Sensibility; The Justice; The Power of Imagination, etc.; The Heat, The Light, The Animal Magnetism, The House of Representatives, The Senate, The Duties of Congress. Poor children, who spend five hours on hard benches, poorly seated, immersed in reading these chapters.

Thus, we must now verify what the Reform of Public Education and the "Opinion on the Adoption of Textbooks", written by the reformer Orestes Guimarães, brings about the textbooks that teach how to "count", the books of Arithmetic, which leads us to questions like: What is

³ These are Brazilian birds' names.

the meaning of math to the reform? How were the questionings of the intuitive method (strongly present in the opinion) applied in relation to mathematics?

Analyzing the "Opinion on the Adoption of Textbooks," and the decree regulating the adoption of textbooks in the State of Santa Catarina, we find that there has been no official embracement of specific arithmetic books for primary schools in the state of Santa Catarina. The Decree 596/1911, which officially adopts textbooks, selects only reading books, drawing attention to the need of textbooks aligned with the method:

"[...] Considering the success of the reform of Public Education decreed, it relies upon educational methods and the adoption of school supplies recommended by modern pedagogy so that uniform procedures are used by teachers to whose arbitrariness should not be limited to the choice of textbooks; Considering the fact that the inspection of teaching must also be exercised on the use of such books; Having in mind what the Inspector of General Education states in his opinion, decrees: Article 1st hereby adopts, to be used exclusively in all public schools, the textbooks contained in this relation that follows, signed by the General Secretary of State.

List of textbooks for the use of School Groups and Isolated School:

- 1 – Cartilha – Arnaldo Barreto.
- 2 – Leitura Preparatória – Francisco Vianna.
- 3 – Primeiro Livro – Francisco Vianna.
- 4 – Segundo Livro – Francisco Vianna.
- 5 – Terceiro Livro – Francisco Vianna.
- 6 – Minha Pátria – Pinto e Silva.
- 7 – Cadernos de Caligrafia vertical – by Francisco Vianna. " (Decree N° 596 of the 7th, 1911. Source: APESC – Public Archives of the State of Santa Catarina).

Quoted in the decree, "Opinion on the adoption of Textbooks" written by Orestes Guimarães at the request of the governor Vidal Ramos, it is more explanatory and arguments the fact that only books linked to reading are officially appointed for adoption:

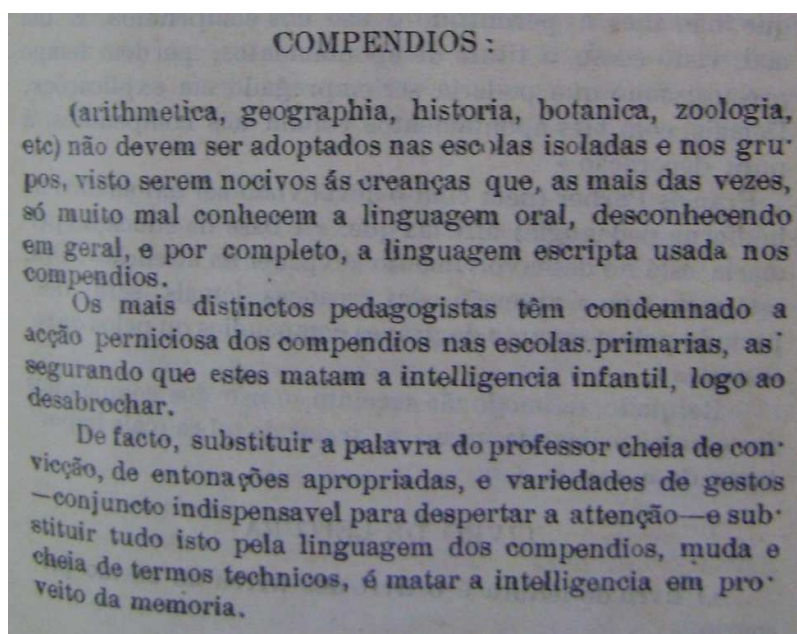


Figure 5 - "Opinion on the Adoption of textbooks" written by Orestes Guimarães in 1911 - p. 5

Compendiums (arithmetic, geography, history, botany, zoology, etc.) should not be adopted in the Isolated Schools and School Groups, because they are harmful to children, which in many cases poorly know the oral language, unknowing in general, the written language used in these books. The most distinguished educators have condemned the pernicious action of using textbooks in primary schools, ensuring that they kill the children's intelligence, soon as blossoms. In fact, replace the word of the teacher full of conviction, of appropriate intonations, of a variety of gestures- all essential to attract attention - and replace all this by the language of compendiums, dull and full of technical terms, is to kill the intelligence for the benefit memory.

It is relevant here to recall the main objective of the reform: the graduate school. The School Groups inaugurated this concept, and with them, a series of changes in public education. The universalization of education and modernization of the country led to such an enterprise, being part of the republican project of popular education, where "the belief in the power to mobilize the school, civilizing and consolidating the social order spreads remarkably during this time becoming the ideological justification for the establishment of state systems of education" (Souza, 1998, p. 21).

The school organization becomes totally different with the School Groups: several classrooms, a teacher for each class, students homogeneously classified (Souza, 1998, p. 20) and the graduation distributed throughout the years. All this change has brought the need for a new pedagogical organization and with it the concept of intuitive teaching, causing changes in the teaching of mathematics:

"From the standpoint of mathematics teaching, the installation of the graduate school implies that it (and other subjects) be thought of as in a *graduate* sense. Until then, for example, the arithmetic is a knowledge, which references to teach are made in some books (textbooks and handbooks) as shown above. The graduate school requires that the teaching of mathematics be measured for different school years. The graduate school places at the center of debates the methodological concern. What should be taught in the first primary year? How should this go about? These questions are not answered by textbooks and manuals. These books contain the 'hard core' of the mathematical content and its references" (Valente, 2011, p. 70).

The adoption of textbooks by the State follows the ideas of modern pedagogy "thus will rage fire against the practice of memorization, verbalism and the habit of reading without comprehending" (Teive, 2012), for this, one uses the intuitive method or objects lessons, implemented alongside the reform. According Teive (2003, p. 230), the intuitive method assumes that teaching must take place starting from the "simple to complex, from concrete to abstract, from the particular to the general, from synthesis to the analysis, from known to the unknown, from things to names, from ideas to words", justifying the role of observation of "things" and not about "things".

We understand that in this sense, the non-adoption of the textbook is understood as a guarantee that the student would be in direct contact with the concrete object, avoiding repetition and memorizing, as we see in the recommendations made to the teachers by Orestes Guimarães himself: "whenever possible, every idea must be objectively brought to the attention of the student, using maps, tables, Level apparatus, spheres, etc" (Teive, 2003, p. 231). But, at first, here seems to be resistance relative to the non-use of these compendiums, because in his opinion, Orestes Guimarães reports his previous experience in São Paulo, where teachers insisted on the use of these.

Portanto, muito bem faz o legislador, banindo das escolas primarias os compendios, obras que, apenas, servirão para roteiro aos professores.

Em 1910, sendo convidado para dar parecer sobre o Regimento Interno dos grupos de S. Paulo, ao artigo 4º que diz: «...empregue processos intuitivos» acrescentei — «... sendo prohibido o uso de apontamentos.»

Defendendo o meu parecer, lembra-me ter dito: «ha professores que, não obstante a opposição dos directores, sempre encontram pretextos para dar apontamentos, já que não lhes é permittido o uso dos compendios. E' um mal, visto como, a titulo de apontamentos, perdem tempo preciosissimo que poderia ser empregado em explicações. Demais, com tues apontamentos voltam aos compendios, á pura decoraçáo.»

Figure 6 - "Opinion on the Adoption of Textbooks" written by Orestes Guimarães in 1911 - p. 6

Therefore the legislator does well banning compendiums from primary school, books that only serve as a guide for teachers. In 1910, being invited to give an opinion on the Internal Rules of the School Groups of São Paulo, Article 4, which says: "... use intuitive processes" I added - "... being forbidden the use of notes." Defending my opinion, I remember saying: "There are teachers who, despite the opposition of directors, always find excuses to take notes, since they are not allowed the use of compendiums. It is an evil, with respect to notes, they lose precious time that could be used in explanations. Further, with the notes back to the textbooks, it is pure memorization.

Through these placements, it is clear that Arithmetic is also treated as the principles of the intuitive method. Considered by the reformer as art and science (Teive, 2003, p. 241), Arithmetic occupies an important place in the reform, both in ordinary teacher training as in teaching children. This is due to the appreciation of science, in detriment of linguistics and humanities, as the main republican mark in the education reforms in Brazil (Teive, 2008, p. 159).

According to Teive & Dallabrida (2011, p. 100), the teaching of arithmetic was valued due to its utility for "everyday life" and also for its use in industries and commerce, but should not be detached from the principles of the intuitive method and "its study should be developed through 'combinations and concrete applications' and the resolution of problems of usual application".

"Thus, its teaching in Schools Groups should follow the formula of the object lesson, presenting concrete objects, such as tablets, marbles, sticks, stones and objects existing in the classroom: number of windows and doors, the number of desk in the right and left line etc., combined with the "Socratic" interrogative form: how many pebbles are there? How many in each hand? Taking three out of six, how many remain? Look, there are six, three in each hand, I remove three, and how many are left?" (Program of School Groups and Isolated Schools of the State of Santa Catarina: Approved and sent to observe. Decree N° 796 of May 2nd, 1914 *apud* Teive & Dallabrida, 2011, p. 101).

To support the activities of Arithmetic in an intuitive conception of teaching, other materials are cited in researches on this subject, which is the case of the Maps of Parker. According to a student from the Normal School interviewed by Teive (2008, p. 68), the Maps of Parker were used in the School Groups in Santa Catarina:

"To teach how to add, subtract, divide and multiply, we had the charts or Maps of Parker, as they were known, they were large posters of approximately one meter long and 50 centimeters

wide, containing balls, facts and numbers, which were presented to children in wooden easels. Each School Group had only one set of these".

The Maps of Parker are much cited by the reformer Orestes Guimarães, according to Teive (2008, p. 69), he would have been responsible for introducing this material in Santa Catarina by "consider them the most modern process of mental calculation, since, according to the intuitive principles, taught exclusively through combinations and practical applications". Also, at the 1st State Conference of Primary Education in 1927, held in Florianópolis, there was the preparation and presentation of theses about the advantages of using the Maps of Parker.

In São Paulo, the Maps of Parker were already in use in public schools and it was probably from this experience that Orestes Guimarães brought this material to be used in Arithmetic teaching in the classes of Santa Catarina. *Revista do Ensino*, a pedagogical journal, published in 1904 from the State of São Paulo, an Opinion of Textbooks to be adopted very similar to the one written by Orestes Guimarães in Santa Catarina in 1911. The non-use of compendiums in the disciplines of Arithmetic are also adopted under the same allegations, but, differently from Santa Catarina, Arithmetic notebooks and the Maps of Parker are indicated:

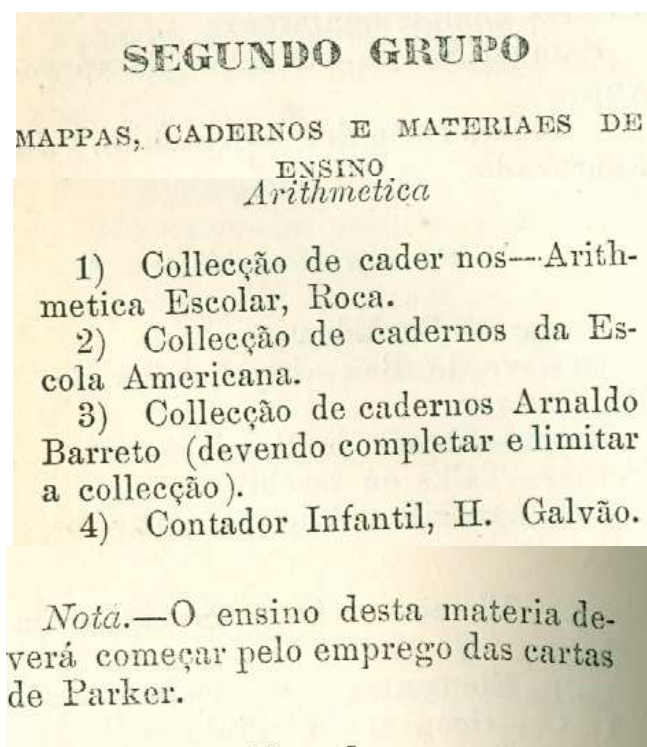


Figure 7 - São Paulo. *Revista do Ensino*. Jun/1904, year III, n. 2, p. 262

Second Group: Maps, notebooks and teaching materials of Arithmetics: 1) Collection of notebooks *Aritmética Escolar*, Roca, 2) Collection of books of the American School, 3) Collection of notebooks by Arnaldo Barreto (having to complete and limit the collection), 4) *Contador Infantil*, H. Galvão. Note: The teaching of this subject should begin with the use of the Maps of Parker.

The written opinion by Orestes Guimarães has the following structure:

1. Books intended for the inspectors' library, which was not a mandatory adoption, but should be allocated to the Board of Public Education and serve as a source of research;
2. Books destined to the library of the School Groups, which was already foreseen in their Statute, serve mainly for the consultation of teachers and directors;
3. Books that should be adopted by decree for use in Schools Groups and Isolated School (primary schools);
4. Books intended for use in complementary schools.

Interestingly, in none of the relations described before there is an indication of the Maps of Parker or even notebooks of Arithmetic. Let us see what is suitable for composing the inspectors and School Groups libraries for the subject of Arithmetic in the opinion on the adoption of textbooks in Santa Catarina, written by Orestes Guimarães:

• Inspector's Library:

- a) *Arithmetica Escolar*, book of master Ramon Roca Dordal ;
- b) *Calculo mental*, Brasilicus;
- c) *Calculo Arithmético*, Alfredo Soares;
- d) *Compêndio de Arithmetica Elementar*, D. M.;
- e) *Soluções e respostas de Arithmetica and Systema Metrico* (elementary and middle course), U. Auvert;
- f) *Explicador de arithmetica*, Sa, 9th edition;
- g) *Arithmetica*, Aarão Reis;
- h) For practical exercises: *Cours Supérieur*, Auvert.

• School Group's Library:

- a) *Arithmetica Escolar*, book of master Ramon Roca Dordal ;
- b) *Calculo Mental*, Brasilicus;
- c) *Calculo Aritmetico*, Alfredo Soares;
- d) *Soluções e Respostas de Arithmetica e Systema Metrico* (elementary and middle course), U. Auvert.

Note that, although there was no adoption of a textbook on Arithmetic, a book is made available to the teachers of School Groups, being the same book in the Inspector's library. It is the Arithmetics teacher's book of Ramon Roca Dordal, whose was also indicated by the opinion of São Paulo as one of the books to be used as a guide for teachers on the preliminary course.

Nobrega (2002, p. 124) reports that Orestes Guimarães, while working at the Municipal School of Joinville / SC during 1907 and 1908, prior to his position as General Inspector of Public Education, presented a report at the end of his management where he defended his idea to embrace only the reading books for elementary school, but ends up acting differently and adopts the book of Ramon Roca Dordal. Note that Orestes wishes to follow the directions of the opinion Sao Paulo:

“Currently the Municipal School has adopted books, notebooks and maps, all based on the adoption of São Paulo, April 28th, 1904. Besides reading books, there are the Arithmetic's collections of Ramon Roca; collection of Dr. Oscar Thompson [Director of the Instruction of Sao Paulo] and Dr. Thomaz Ribeiro Lima; collection of language books, etc” (Guimarães, 1909, p. 23 *apud* Nobrega, 2002, p. 124).

The similarities between the books contained in these two reports draws attention. For this research, especially the book of Ramon Roca Dordal, raises questions about the reason of such choice. Due to all of the changes, could this be a strategy to install a new culture for the subject of school arithmetic?

According to Costa (2010, p. 182), in São Paulo the accentuated development of the publishing industry in the early twentieth century was mainly due to the expansion of public schools, and the new model of school - School Groups - required that new teaching materials be produced.

"While for specific furniture – schools desks, for example - there was the possibility of importation, but the same was not true for books. These needed to be translated and adapted to local realities, or even had to be developed under the new educational guidelines shaping a national education standards guided by the new polity. Thus, the expansion of public elementary school triggered the national production of textbooks" (Razzini, 2004 *apud* Costa, 2010, p. 183).

One should also consider that since the Proclamation of the Republic the states choose the textbooks used in public schools due to the fact that they control the curriculum and aim to uniform teaching. Due to it, new authors for textbooks emerged, in the case of São Paulo, they were the currently present normalists – teacher graduates from Normal Schools - thus making the state governments become major consumers of textbooks (Costa, 2010, p. 183).

Some authors from São Paulo were highlighted among the favorites. Costa (2010, p. 184) argues that in the early twentieth century many titles of authors from São Paulo were inserted in the catalogs of the Library of Francisco Alves (major library at that time), including Ramon Roca Dordal, that also circulated in Santa Catarina, as seen above.

The presence of this book in Santa Catarina has a significant issue for school mathematics of that time and its institution as a subject, for "the various knowledge of a school subject, the first in chronological order, but in order of importance, is exposure of the content knowledge by the teacher or by a manual" (Chervel, 1990, p. 202). Thus, it seems that the choice of Dordal's book, even though it had not been adopted, but made available to teachers in the libraries of School Groups, provides a format in its content that satisfies the republican ideals for the establishment of a school culture in mathematics in primary education.

Being it their content or the form in which it is exposed, Dordal's textbook can tell us something about the thought that he had on the teaching of "counting" at the time, and within a new perspective on school culture, the evolution was notable. The choices made,

"[...] highlights some major trends: developments that goes from the dictation to a learned lesson by the book, formulation through writing, more flexible for the exhibitions, the recitation to the impregnation, from completeness to a selection of main lines" (Chervel. 1990, p. 202).

Ramon Roca Dordal was Spanish, but lived in Brazil since he had nineteen years of age. He studied at the Normal School of São Paulo, was a teacher, director of School Groups, held several public offices, including public school inspector in the city of São Paulo (Costa. 2010, p. 185). The book cited in the opinion: *Arithmetica Escolar: Exercícios e problemas para as escolas primárias, famílias e collegios*, had six volumes, and Costa (2010), when analyzing the first of these four volumes, shows that the contents of the notebooks was basically numbers, operations of addition and subtraction and Roman numerals. These were classified by blocks and interspersed into different levels.

"The content presents an organic arrangement so that some could be addressed especially with various levels of depth. There was concern that the contents should gradually be studied by the student by exposing him to examples. In blocks we noted considerations about the numbers, addition, subtraction, and Roman numerals distributed and interspersed throughout the four notebooks. This content grid is configured, possibly influenced by the intuitive ideas of teaching, which assumes an inductive approach from particular to general starting from the known to the unknown, from concrete to abstract" (COSTA, 2010, p. 188).

We can also see the presence of intuitive principles as Costa (2010, p. 190) reports that the problems present in the Ramon Roca Dordal's books were carefully measured to avoid tiring the pupils and had a great concern with the language used.

We find here, what could be the reason for choosing this book - its composition according to the intuitive teaching - which, as we've seen earlier, was intensely pursued by the reformer of the Public Education Santa Catarina. We also saw, in justification of the non-adoption of textbooks arithmetic for students, the fundamentals of the method, where Valdemarim (1998, p. 69), when talking about the differentiated pedagogical practices of the intuitive method and the materials that comes of them, points the usefulness of the textbook "material essential to the teacher, exposing a model procedures for the preparation of activities that represent the general methodological guidance prescribed, justifying the proliferation of these books in that period".

According to Valente (2011, p. 71), teaching materials were "the way to make [method] it work in the pedagogical practice" and were transformed into "an instrument of work for teachers and facilitators of student learning, becoming a central aspect of the organization of the first School Groups in Santa Catarina "(Teive & Dallabrida, 2011, p. 83).

Thus, every reform and the use of books and materials seem to have been made on the basis of the establishment of the intuitive method as the main focus of teaching. Through this, public education would be able to "reverse the inefficiency of school education" (Valdemarim, 1998, p. 67) inherited from the previous polity.

Thus, this analysis refers again to the role of the textbook in the reform of Public Education of Santa Catarina because, as we can see in the examples above, the choices or the banishment of the use of textbooks, as in the case of Arithmetic, helped to build a differentiated school culture. Choppin (2004) reports that textbooks have "four main functions, which can vary considerably according to the sociocultural environment, time, subjects, education levels, methods and forms of use", and, in this specific analysis, we consider that the role of textbooks in "Orestes Guimarães Reform" seems to have followed the path of a "cultural and ideological function".

"Ideological and cultural function: it is the oldest function. From the nineteenth century with the formation of national states and the development, in the context, of the main educational systems, the textbook has established itself as one of the key vectors of language, culture and values of the dominant social class. Privileged instrument for the construction of identity, it is generally recognized, as is the currency and the flag, as a symbol of national sovereignty and as such plays an important political role. This function, which tends to acculturate - and in some cases, to indoctrinate - the younger generation, can be engage in explicit, systematic and even ostensible, or even so dissimulated, surreptitiously, implied but not less effective manner" (Choppin, 2004).

With regard to establishing an education program in accordance with republican ideals, written by authors concerned with the spread of such elements, we find that the Reference Function of the textbook has also fulfilled its role.

"*Referential function*, also called curricular or programmatic, provided there are teaching programs: the textbook is then only a faithful translation of the program or, when there is the freedom of competition, one of its possible interpretations. But in any case, the textbook is considered the privileged support of the educational content, the repository of knowledge, techniques or skills that a social group believes that it is necessary to pass on to future generations" (Choppin, 2004).

Similar to the reinforcement of the pedagogical practice based on the intuitive teaching method, the textbook refers to its instrumental function of supporting teachers in their classrooms.

"*Instrumental Function*: the textbook implements learning methods, it proposes exercises or activities that, according to the context, aim to facilitate the memorization of knowledge, encourage the acquisition of subject skills, methods of analysis or problem solving, etc" (Choppin, 2004).

Concluding remark

In view of what has been exposed so far, it is understood that the "Opinion on the Adoption of Textbooks" is a document of great value to understand the historical issues of primary education in Santa Catarina, for it shows us a dimension of the process of installing a new school culture in the state. Researches in this area have shown that this period was significant for the education of Santa Catarina, bringing major changes and different meanings for the school subjects.

It should be noted that we believe that the subject of mathematics has changed significantly with the implementation of the reform, but this is due to changes in the purpose of the subject or in the purpose of education in general, for that particular historical moment. The whole functioning of the subject of mathematics, or Arithmetic for the case of "counting," was established on a body of knowledge in accordance with the scientific thinking of that time, and its determinations according to the perception of the intuitive method.

The "counting" continued with its purpose to teach only the basics, but its purpose evolved from a simple memorizing/memorize for the effective application in the daily work of a country that began to industrialize. Chervel (1990, p. 203), about the aims of the school subjects, reports that "we must admit that the subjects has changed because its purpose has changed" and that textbooks are an important source of study for this change because they also evolve or transform.

The non-adoption of an arithmetic book has great value for the foundation of the subject of mathematics in schools in the 1911 Public Reform Education, for it will determine a different way of teaching, but also, the kind of thinking placed in the opinion written by Orestes Guimarães shows that there is a break with the past by bringing to the state materials and textbooks of intuitive and nationalist way.

Finally, by the documents analyzed and other researches related to the reform, we have that reform used all possible apparatus to impose their ideas, being the textbook one of the main points in which its value and influence in school culture is recognized.

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