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PAPERS

Educational practices in Mathematics at School of Application - UMG/UFMG (1954-1968) and their relationship with textbooks[1]

Práticas educativas em Matemática no Colégio de Aplicação da UMG/UFMG (1954-1968) e suas relações com os livros didáticos

Prácticas educativas en Matemática en Colégio de Aplicação - UMG/UFMG (1954-1968) y su relación con los libros de texto

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Abstract

This article focuses on Mathematics textbooks at School of Application of Universidade de Minas Gerais/Universidade Federal de Minas Gerais in the period 1954-1968. The study aimed to conduct an analysis based on the crossing of written documentation and narratives of former students and teachers collected in interviews with the methodology of Oral History. The investigation evidenced the protagonism of textbooks in a teaching context centered on the teacher, with many exercises and the presence of rigorous evaluation instruments. It was sought to articulate, in the study of the books, which played a fundamental role in the educational practices in Mathematics of School of Application, the forms of organization of the field of education in the investigated period, the structure of the works involved and their reception by students and teachers.

Keywords: School of Application - UMG/UFMG. Mathematics Textbooks. Oral History.

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Resumo

Este artigo focaliza livros didáticos de Matemática no Colégio de Aplicação da Universidade de Minas Gerais/Universidade Federal de Minas Gerais no período 1954-1968. O estudo teve como objetivo realizar uma análise com base no cruzamento de documentação escrita e narrativas de antigos estudantes e professores colhidas em entrevistas com a metodologia da História Oral. A investigação evidenciou o protagonismo dos livros didáticos num contexto de ensino centrado no professor, grande carga de exercícios e presença de instrumentos avaliativos rigorosos. Procurou-se articular, no estudo dos livros, que tiveram papel fundamental nas práticas educativas em Matemática do Colégio de Aplicação, as formas de organização do campo da educação no período investigado, a estrutura das obras envolvidas e sua recepção por alunos e professores.

Palavras-chave: Colégio de Aplicação da UMG/UFMG. Livros Didáticos de Matemática. História Oral.

Resumen

Este artículo se centra en los libros de texto de Matemática en Colégio de Aplicação de la Universidade de Minas Gerais/Universidade Federal de Minas Gerais en el período 1954-1968. El estudio tuvo como objetivo realizar un análisis a partir del cruce de documentación escrita y narrativas de exalumnos y docentes recolectadas en entrevistas con la metodología de la Historia Oral. La investigación evidenció el protagonismo de los libros de texto en un contexto de enseñanza centrado en el docente, con gran cantidad de ejercicios y presencia de rigurosos instrumentos de evaluación. Se buscó articular, en el estudio de los libros, que jugaron un papel fundamental en las prácticas educativas en Matemática del Colégio de Aplicação, las formas de organización del campo de la educación en el período investigado, la estructura de las obras involucradas y su recepción por parte de alumnos y profesores.

Palabras clave: Colégio de Aplicação - UMG/UFMG. Libros de texto de matemáticas. Historia oral.

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Introduction

Textbooks, also referred to as school manuals, schoolbooks, or education manuals, have long occupied an expressive place in historical research in Education. Several studies take them as a source or object; others, in turn, are dedicated to the theoretical and methodological dimensions relevant to their analysis, offering varied perspectives. The presence of these works can be easily verified in dossiers of educational journals, such as the one published in 2012 in the journal Pro-Posições, called "Textbooks: the multiple facets of a cultural object", the one promoted by Cadernos de História da Educação in 2018, entitled "Textbooks, technological-pedagogical mediations of the Modern School", and the most recent, in 2020, of the Revista Brasileira de História da Educação, called "Theoretical-methodological issues in textbooks".

Cigales and Badanelli (2020) emphasize the absence of consensus about the conceptualization of the textbook, both because of the diversity of national contexts in which it appears and because of the linguistic, political, educational, and cultural dimensions, which make the issue of producing a term comprehensive enough to encompass its meanings very complex. However, they explain some

> basic characteristics of what can be considered a textbook, such as the intentionality of the author or editor to be expressly geared to school teaching; systematicity and sequentially in the exposure of content; suitability for the pedagogical work; expository textual style; combination of image with text; presence of explicit teaching resources such as tables, charts, exercises, etc.; regulation of content according to official education plans and state supervision of the production and circulation of these cultural artifacts (CIGALES; BADANELLI, 2020, p.1)

Regarding textbooks aimed at the school teaching of mathematics, there is a vast number of works, which focus on various levels and modalities of education. Just to cite some recent examples, we recall Mendes and Valente (2017), Dassie (2018), Búrigo (2019), Soares (2019), Silva and Silva (2019) and Rodriguês and Costa (2021). As an example, from the international context, we highlight the 2018 special issue of the journal ZDM Mathematics Education, which focused on recent advances in research on mathematics textbooks (SCHUBRING; FAN, 2018). Among the many and varied papers, a less explored focus than on the content conveyed and its approach or even on material and editorial aspects is that of the reception and uses of the textbook in the school environment. Contributions in this direction are represented by Giani (2004), Vieira and Gomes (2014), and Melillo and Gomes (2019), who draw on narratives produced in interviews with Oral History methodology. In this article, we present and discuss part of the results of the research (COSTA, 2021) whose objective was to create a history of educational practices in Mathematics in a school in Belo Horizonte in the period 1954-1968. It was the Application School of the Faculdade de Filosofia da Universidade de Minas Gerais (UMG), a federal institution established in 1949 and renamed Universidade Federal de Minas Gerais (UFMG) in 1965. The research showed the strong participation of textbooks, which were the guide for content selection and lesson planning by the teachers. Like the works just mentioned, this research also made use of Oral History.

The next sections deal with the school institution, Oral History and the research respondents, the educational practices in Mathematics at the School of Application, and the role played by textbooks in this context.

The UMG/UFMG Application School

On March 12, 1946, Decree-Law No. 9053 created the application gymnasiums, schools to be maintained by the federal Philosophy Faculties, at the time responsible for training secondary school teachers. The decree applied compulsorily and aimed to improve the pedagogical preparation of future teachers, who, enrolled in the Didactics course, compulsory for undergraduates, would have in these schools a place to develop their pedagogical practice. The Gymnasium was to be located at or near the Faculty. According to the Decree, a professor of Didactics from the Philosophy Faculty would direct these schools.

The Faculties of Philosophy would have one year to offer these schools, which was later extended to 1949. The Gymnasium of Application was the name of the school that offered only the junior high school, while the Application School was the name of the schools that offered both junior high and high school. This nomenclature is due to the function performed by the school, the primary justification under which it was created: to allow students in the Didactics course to apply the theoretical knowledge acquired in the licentiate courses in real teaching and learning situations. Thus, the Colleges of Application emerged, with a clear and defined functionality and organizational mode.

The Gymnasium of Application of the Faculty of Philosophy of the University of Minas Gerais was established on March 23rd, 1954, under the terms of Decree-Law No. 9053, for the Teaching Practice of undergraduate students. Transformed into the School of Application Faculty of Philosophy of the Universidade de Minas Gerais in 1957, it also started to offer the secondary level, including, in 1965, the Normal Course.

It is important to explain the reasons for the delay in the creation of the School of Application in Belo Horizonte, linked to the context of the Faculty of Philosophy of Minas Gerais, a private institution whose foundation date was April 21, 1939, and which started its academic activities in 1941. It was an independent and private institution, and, therefore, did not meet the conditions of the Decree-Law No. 9053 of 1946, which established the obligation for federal colleges of philosophy to create a gymnasium of application. The recognition of this Faculty of Philosophy as an official educational institution came only in 1946 and later, in 1948, it was incorporated to the University of Minas Gerais[2] and federalized the following year, in 1949.

After the federalization, the institution needed to adapt to the norms that governed higher education at the federal level and one of the requirements was, precisely, the creation of the Gymnasium of Application. Thus, in 1951, Professor Tabajara Pedroso, former dean of the Faculty of Philosophy, presented a project for the installation of an application gymnasium, in accordance with Decree-Law No. 9053 of 1946. This project foresaw the installation of a gymnasium for the following year, 1952, and its transformation into a college of application when the first class finished the 4th grade of the first secondary cycle. Difficulties in obtaining space for the school were only solved in early 1954[3], when it moved to a building that had previously housed a School of Agriculture and Veterinary Sciences and the Afonso Arinos Gymnasium, a private school.

[2] The University of Minas Gerais was initially a private, state-subsidized institution, and remained so until December 17, 1949, when it was federalized. During the military government, by its determination, from 1965 on, it was renamed Universidade Federal de Minas Gerais - UFMG. It "becomes a legal entity of public law, of free education, maintained by the Union, with didactic-scientific, administrative, disciplinary, and financial and patrimonial management autonomy". https://ufmg.br/a-universidade/apresentacao/linha-do-tempo Last access on: 25 Feb. 2021.

[3] Officially, the Gymnasium of Application was inaugurated on April 21st, 1954, and its first principal was Professor Filocelina da Costa Matos Almeida, professor of General and Special Didactics at the Faculty of Philosophy (COSTA, 2021).

At the time of its inauguration, the Application Gymnasium received eighteen students in the first grade, twelve students in the second grade, five students in the third grade and four students in the fourth grade. After the graduation of the first class, in the following year, 1958, the Gymnasium of Application was converted into a College of Application, which marked a new phase for the institution, characterized by the growth in the number of students, the reduction of repetition[4], the great demand from students and the presence of a very demanding entrance exam (COSTA, 2021). The School of Application existed for 13 years, from 1954, the date of its creation, until February 28, 1968, when, during the University Reform, it was converted into the UFMG unit still called Pedagogical Center. During this period, it offered the Gymnasial, Classical, Scientific, and Normal courses.

Oral history and the interviews conducted

The research that has part of its results focused on the present text prioritized the constitution of historical sources through interviews with former students, employees, and teachers, conducted using the methodology of Oral History. The eleven interviews, ten individual and one collective[5], aimed at the elaboration of memories about the educational practices at the School of Application, as well as to get to know the subjects' perceptions about Mathematics at the school since its creation, in 1954, until 1968. The school yearbooks were the sources that led to the names of the Mathematics teachers during the targeted period. Although some of them had passed away, through the human resources department of the Pedagogical Center it was possible to locate, besides three teachers, a guidance counselor, all of them retired. Contacts established by the first author in a Facebook group dedicated to old photographs of Belo Horizonte, in early 2017, led to two (out of a total of four) affirmative responses to the question regarding granting an interview about the school. Only one of the respondents, who kept periodic meetings with his class, graduating from the Scientific course at the Application School in 1965, continued the dialogue. It was this former student, Carlos Tassara, who was responsible for promoting a meeting of former classmates, attended by the first author of this article. At this meeting, the researcher obtained the phone numbers and emails of these former students, ten of whom later, in 2019, in a new meeting, granted her the collective interview. Before that, however, in June 2018, a former colleague of Carlos Tassara, Paula Apgaua Britto, a member of that group, agreed to conduct an individual interview. Paula made a referral to a former student who was from another class, who, although unable to participate, recommended the name of another student, Gilvan Westin Cosenza, who, in turn, offered more phone numbers and emails of former students of the school. Gilvan, in addition to granting the interview, was responsible for contacting his sister Gilvânia Westin Cosenza and two others, Rafael Rabelo Guimarães and Camélia Elizabeth dos Santos Cassimiro; all three agreed to give the interview. Camélia remembered another former student, Ana Maria Reis de Souza, who was also interviewed. Thus, the so-called "network criterion" was configured, in which an interviewee introduces other possible collaborators. The four individual interviews with the three mathematics teachers and the guidance counselor contacted are added to the six with former students and the collective interview to make the eleven interviews mentioned above, which involved, in total, 18 collaborators.

[4] The first-year gymnasium class, which started in 1954 with 18 students, had only one student as a fourth-year graduate in 1957. In 1955, only nine students from this class enrolled for the second grade, and for the third grade only three students from the 1954 entering class enrolled (COSTA, 2021).

[5] The interviews were conducted in 2018 and 2019. The collective interview brought together a group of 11 alumni from the Scientific graduating class of 1965.

The students, teachers, and the guidance counselor were interviewed based on a script that contemplated the school daily life, the pedagogical practices, the methodologies, the resources employed, and the didactic materials used, with emphasis on Math teaching. The conversations were audio recorded, transcribed, and textualized[6] to form a set of eleven narratives. In addition to these narratives, several school documents were analyzed, such as the minute books, report cards, photographs, the time book, and the admission book. Thus, the adoption of Oral History, with the production and use of interviews, did not presuppose the abandonment of other types of documents. In this sense, the statements were characterized as the primary sources, but they called for the crossing of sources, other potential documents of different natures, so that dialogues could be established between the information presented in one and the other. In summary, what was thought as essential was the differentiated qualitative nature of the information incorporated by the testimonies provoked by the interviews in relation to the other previously existing documental materials. For us, using Oral History in the historiographical operation means

> To begin this operation with the sources produced from orality and, according to circumstances, gradually incorporate other sources that can support the creation of the narrative. It is not a matter of resorting to orality only when written sources are insufficient, nor of stubbornly restricting oneself to oral sources only when there are countless other sources available (written, pictorial, architectural, etc.). It is about starting a process from a singular perspective, that of the narrative of a situated subject, and gradually opening this dialogue, incorporating writings and other information, expanding this perspective, not to check the (or get to the) truth of the subject, but to create a plausible storyline in which narrator and listener recognize each other: a storyline that narrator and researcher deem significant as part of the archive they have to know a certain aspect of the world (GARNICA, 2015, p. 42).

The narrators' memory, because of a work of organization and selection of what is important for the sense of unity, continuity, and coherence - that is, of identity" (ALBERTI, 2006, p.167), thus assumed a central position in the investigative work undertaken. Oral narratives, according to Fernandes (2011), make it possible to understand social experiences shared at crossed times, that of the report and that of what happened, contributing to a relationship between the collaborator and the researcher that goes beyond the search for the veracity of the facts. In this sense, Portelli (2013) points out that we must consider that oral sources are not always dependable in factual terms. "But this, instead of resulting in a weakness, results in a strength: errors, inventions and myths guide us through and beyond the facts, allowing us to discover their meanings" (p.103).

Consultation of documents and contacts with former students of the Application School led to the persons interviewed. The names of the three mathematics teachers, their years of birth and period of performance at the school are: Aloys de Meira Carvalho (1933; 1955-1984), Clemenceau Chiabi Saliba (1934; 1962-1972) and Paulo Sérgio Wanner (1945; 1968-1997). Maria Leonor Vianna Ferrari (1936; 1965-1999) was the guidance counselor. The sixteen former students, born in the 1940s and 1950s, are: Marco Antônio Ferreira, Paulo Ângelo de

[6] After the transcription, that is, the passage from the oral to the written register, the textualization was carried out, that is, the text was rewritten, removing the strongest marks and the grammatical mistakes typical of orality, as well as the repeated statements and noises. In this way, we tried to organize a coherent text, to make the reading of the statements more fluent. In this process of rewriting the transcript, excerpts relating to specific themes, which sometimes appeared in different places in the transcript, were also gathered together.

Pinho, Carlos Eduardo Rezende Braga, Eduardo Belisário, José Lima Oliveira Júnior, Camélia Elizabeth Cassimiro, Gilvan Westin Cosenza, Rafael Rabelo Guimarães, Carlos Tassara, Cláudio Berenstein, Luiz Santana Ivo, Marcus Gontijo, Paula Apgaua Brito, Ana Maria Reis de Souza, and Gilvânia Westin Cosenza.

We noticed that the group of collaborators constituted a community of memory marked by reference to the School of Application; in their narratives, they articulated individual and collective experiences. When speaking, they chose what seemed relevant to them, showing their belonging to the group, and selecting memories according to the place they occupied at the time of the interview (ALMEIDA, 2009). It is necessary to consider the distance between the time of lived and the time of remembered and narrated.

> The individual who remembers has matured during this interval, he reworks what he has lived from the time elapsed, in which he absorbed the consequences of the situation once experienced. The one who remembers is no longer the one who lived. In his account there is already reflection, judgment, and re-signification of the remembered fact. He incorporates not only what was recalled at the level of personal memory, but also what was preserved at the level of a social memory, shared, re-signified, the result of a sanction and of a collective work. That is, individual memory is mixed with the presence of a social memory, because the one who remembers, remembers in each context, already marked by a game of remembering and forgetting (PESAVENTO, 2012, p. 95).

In examining the narratives and relating them to other documents, we kept these considerations in mind. In the following pages, we seek to characterize the educational practices in mathematics developed at the School of Application and articulate them with the role played by the textbooks.

Educational practices in Mathematics at the School of Application

The pedagogical practices of the Mathematics teachers at the School of Application, as commented by the interviewees, seem to have followed the teaching and learning process described by Fiorentini (1995): teacher-centered teaching and passive attitude of the student. The former students and teachers of the school unanimously highlighted a first aspect of the practices, namely the hegemony of the expositive Mathematics classes. According to former student Ana Maria, a student from 1966 to 1968, the professors would talk, and the students would copy and write down. In the words of another former student, Rafael, who studied at the Gymnasium and part of the High School from 1962 to 1968

The teachers, practically all of them, taught on the blackboard. They always gave us something, explained it and kept writing, that is, at that time we even spent a lot of time writing. They wrote everything on the blackboard and explained. Some found it easier to explain than others, but the method was writing on the blackboard.

A second aspect always present in the testimonies of former students was their recollection of the use of a vast number of exercises as the main methodology for teaching mathematics. For example, former student Luiz Santana told how the Math classes were during the Scientific (High School), which he attended from 1963 to 1965. *Math classes were based on exercises. I remember that when I went to the junior high school, I had books where I did 100, 200, 500 exercises. It was not like today, it was boring, it was exhausting, exercise after exercise, everything you could think of you had to do.*

Professor Clemenceau explained the ways in which he prescribed exercises and exposed his conceptions about their positive effect on learning:

We give a series of exercises in increasing degree of difficulty for students to solve. You take the first exercise and check if there is any difficulty. The first exercise, which is extremely easy, you give on purpose so that everybody gets it right.

The stimulus is an answer. When people said that what I was doing was absurd, I said: "I use operant conditioning. You stimulate, the "guy" gets it right and wants to get it right again. It is just like the little children's game: "Boy, stop playing". Nobody ever said: "Boy, you have to play". Nobody has ever said it. They always say: "Stop playing. Why? Because it will make the boy get it right and he will like it, and we want to get it right again, it is a stimulus-response.

It's the same thing in math. I give you an exercise, the student gets it right and is happy. I give them another exercise that is a little more difficult, and they get it right. I give them another exercise that is a little more difficult, more complicated, and they get excited. Now, if you give them a difficult one right away and they get it wrong or don't know, they think, "I'm really stupid. So, what do you do? You encourage them. Improving what? His self-esteem.

Once you finish this stage where you see that he is doing well, there will come a point where he will have difficulties. You are giving exercises to a degree that students can get it right, get it right, get it right. From now on, I would go in with autonomous activity. I would give exercises to do at home. The exercises from 17 to 50 and the day after tomorrow I'll check the notebooks. But there was no talking, they didn't do just two exercises.

A third aspect of the educational practices to be considered is that of evaluation. According to the interviewees, in Mathematics there were primarily tests, without the presence of other instruments, such as assignments, for example. In the interviews, former students and teachers recounted memories about the format, application, and correction of the tests.

About the evaluations, in math it was a test, a real test. They gave you the exam to do, solve the questions, the equations. You would return the test all scribbled down with a good grade or better (Gilvânia, student from 1966 to 1970).

During the evaluation process in mathematics, the students got their points only by taking tests. All grades were for tests. Grades were not given for assignments, because many times one student did the assignment and the others copied it. So, there were only evaluations by means of tests. The final grade was the sum of the exam grades. (Paulo Wanner, former teacher)

The tests were mimeographed or handed out on the blackboard for you to copy on a sheet of foolscap paper and present the resolution of each problem (Carlos Braga, student in the period 1961-1965). The teachers demanded that we put the draft on the exam (Luiz Santana, former student). It was done in pen, not in pencil (Carlos Braga, former student). Sometimes, you gave a wrong answer, but the teacher got your reasoning and said: "you made a mistake because you did this wrong calculation here" (...). We didn't have multiple choice tests. You had to solve. You had to do all the development and reasoning to get to the result. There was no way to guess (Luiz Santana, former student).

According to the minutes book of partial exams at the School of Application, there were two such exams, one in June and another in November. The book records the grades for each subject, as well as the signatures of the secretary, the federal inspector, and the principal. In the case of the gymnasium, there was also an oral test held in December, accompanied by the inspector, with an evaluation commission made up of teachers. The records include the grades of the candidates with their respective averages, with the signatures of the president of the commission, who took the minutes, the other two members and the Federal Inspector. We verified that the evaluation records were presented according to the legislation in force, that is, the Decree-Law nº 4.244, of April 9, 1942, of the Capanema Reform. Thus, it was a process that controlled the teacher's evaluation instruments.

According to article 49 of this decree, the two partial mathematics examinations would be written, one in June and the other in October. At the School of Application, these exams took place in November, and the final exam, which would be oral, before the examining board, would be held in December. We asked tea Aloys how the oral exams were held at the School of Application, but, although we showed her the book of minutes of the oral exams, which had her own signature, she did not remember the execution of this type of evaluative activity. However, she recognized her signature and said that if she had signed the document, it was an indication that the tests had taken place. However, she could not remember because so much time had passed.

Some teachers used oral examinations to grade the students, as Professor Clemenceau reported.

The average was five. But to get five you had to be good. There was no participation grade. There was no participation grade. The grade was a test, you did or didn't do, zero and that was it. I used to give a lot of examinations that were worth a grade. I put the boy on the board and asked him to solve a problem for me, in which case I evaluated how he solved the problem. "Do this limit, do this equation here for me.

Former student Gilvânia recalled her discomfort with this kind of activity and expressed her view that the questioning affected the students emotionally.

We had to be ready to respond to the demands of the school, of the college. So, you came in, you had the examinations that we were scared to death of. You had to speak. You had to speak in front of the whole class. They put an equation on the blackboard for you to solve. It was eternal death, so frightening was it, and it was the lesson of surprise, of arguing.

It was random. I would run my finger down the roll call list. It was always random, they say. So-and-so! Who doesn't know where A, B, C or D is in alphabetical order? And if the teacher was in a bad mood, I think he chose the ones he knew he was going to screw up. So, you had to have your classes up to date, because otherwise you had to "pay a lot of attention". It was very bad, it was humiliating, if you got a bad grade one day you could catch up the next day, which was fine. But getting several bad grades, going to an exam, and not knowing anything, stuttering... I studied terribly, but I was scared to death to get to the front and not know how to answer anything. Look, there were some professors who liked to give oral examinations. There was the oral exam, but this was a surprise.

Another evaluation process faced by the students at the School of Application was the second season exam, intended for students who did not reach the average in the subject. It took place in February and involved all the subject matter of the school year, according to the account of Camélia, a student at the school from 1962 to 1966.

The exam of the second season was in February. I took private classes, because there were no supplementary classes, there was no such thing. The student studied on his own and took the exam on the day they scheduled. The content of the exam was the content of the entire year.

For Rafael, the evaluation process was very demanding, and a great dedication was indispensable for the student to be approved. *It was too hard, gee, for me to pass an exam. I know several friends who had really failed, so failure was not rare. My cousin herself was good in math and ended up getting a bomb in math, I don't know why. I think the teacher didn't like her very much.*

Failures did not occur only in Mathematics, and the power of decision over the student's failure or not was solely in the hands of the teacher. In this process, each teacher assigned a grade and delivered the results to the secretariat.

The arrival, in 1965, of the supervisor Maria Leonor significantly changed the centrality of the teacher in the process of passing or failing students. This was because, as argued in her account, Maria Leonor started working with the teachers so that they could evaluate the students in a broader way.

We also did a collective evaluation work, together with the teachers, which was later called class council. An evaluation was made not only of intellectual performance, but also of psycho-emotional performance, which allowed me a more effective participation.

Valente (2008b) explains that the period of the history of education in Brazil covered by our research was characterized as a "transition in the evaluation process, from extra-school authority (strange examiners) to internal authority, that of teachers, in the task of evaluating their own students." The author points out that the teacher's authority has always been controlled by the educational authorities, through legislation and the inspection of educational establishments conducted by inspectors. In the School of Application, the federal inspector performed the inspection. Valente adds that reports with maps of partial grades and other instruments were created to monitor the evaluation processes carried out by the teachers themselves (VALENTE, 2008b, p. 30). The author also argues that teachers had a controlled freedom, in which the Ministry of Education seemed "to measure no efforts to guide inspectors on how they should control the work of teachers in the evaluation of students" (p.31).

A fourth characteristic aspect of the educational practices in Mathematics at the School of Application was the fact that teaching was not articulated or shared among the teachers. Each teacher conceived his lesson plan and followed it according to his individual knowledge, his beliefs, and convictions about the best way to teach and his own pedagogical practices. As it was a small school, usually each teacher was responsible for one grade. The teachers organized their activities autonomously, without any inspection or supervision by the Board, according to the account of the former principal, teacher Alaíde, granted to Collares (1989, p. 141): "It was a rule of the Board that the teacher's autonomy was respected. Each one did his own program, organized his own plan, and executed it, without any concern for supervision by the board, but rather with encouragement.

The occurrence of some dialogue happened, eventually, among teachers of the same grade, as reported by teacher Paulo Wanner*: We didn't have a mathematics coordinator, as many schools have today. We didn't have a course plan and the tests were not evaluated. There was not this more systematic supervision, as there is today. Each one did his or her own lesson plan. Even because the school was not very big. So, for example, in the morning shift, who worked in the first, second and third grades it was just me, there was no other teacher. I would talk to Professor Raimundo, who was the Math teacher for the night shift, and we would try to do something together. In the afternoon, the Gymnasium was in session, and teachers Paulo Roberto, Mrs. Aloys and Rogério were responsible for teaching Math, at that time.*

In this model where teachers worked individually, there were many teachers working in different ways and with different didactics, which caused some problems. Although teachers followed the textbooks as a script for their classes and teaching plans, they did not share with their peers the contents taught or the ways to work with them. According to former student Paula's report, the teachers couldn't comply with the proposed syllabus for each grade, and, without a dialogue among them, a difficulty arose: the contents not covered in one grade were not contemplated in the next grade, which caused a gap in the teaching, leaving the students responsible for studying autonomously the contents not covered.

In the statements of former students and teachers, the textbook stood out as an essential component for the teaching of mathematics in the School of Application. The role of the textbooks was manifested in the testimonies that their ways of approaching the contents were taken as the basis for the Mathematics classes. We realize that the textbooks can reveal

indications of the relations established between teachers and their students and indicate the trends present in the teaching of the subject, allowing us to build connections between such trends and the official programs in force in that period.

Characterization and protagonism of Mathematics textbooks in the School of Application

It is a teacher's duty to choose the textbook to be adopted, although it was necessary to inform the institution's director about this choice. That said, it was possible to observe that the institution's teachers, in general, were adept at using textbooks. For the teaching of mathematics there was not much material available, as Professor Clemenceau pointed out: *At that time, we didn't have many resources, but we were not very demanding. In fact, we used what we had. Technology was blackboard and chalk. When the course started, we had the apostille, but at school it was the textbook, chalk, and blackboard, not much.*

The narratives reveal the fundamental role of the textbook in the teachers' practices, especially because this material worked as a guide for the curriculum and the lesson plans. The mathematics syllabus at the School of Application was followed according to the recommendations of the contents of the books adopted by the teachers, as teacher Aloys reported: *regarding the teaching of mathematics, we worked with the contents that came in the book that was adopted. We didn't create a curriculum. There was a time when Magda*[7] *even gave us a course in which you had to specify everything. The contents worked. But we didn't do any of this. We didn't do the curriculum, we followed it through books, books, you know? And we were practically forced to follow the curriculum of that book that had been adopted. That was 60 years ago, that's a long time ago.*

This practice seems to have lasted for all the years the school was in operation, because, according to Professor Paulo Wanner, who joined the school in 1968, the last year of our period, there was no teaching plan for mathematics at the institution. According to his account, it was his responsibility to teach mathematics. According to his account, it was the responsibility of each teacher to the preparation of an individual plan and what should be followed was found in the textbook adopted for the school: *Our lesson plans were based on the contents of the textbook. So, for example, in the 1st grade textbook, we used all those topics. We also did this for the 2nd and 3rd grades. And at the end of these three years, we should have fulfilled the entire Federal vestibular program.*

This relationship between the textbook and the constitution of curricula points to the compliance with official rules and programs in force as a frequent element of pedagogical practice at the School of Application. In this sense, Corrêa (2000, p.3) when expressing the link between schooling and textbooks, seen as sources of research in History of Education, states that textbooks constitute an object in circulation

> and, for this reason, are vehicles of circulation of ideas that translate values, as we have said, and behaviors that were desired to be taught. Add to this the fact that the relationship between schoolbooks and schooling allows us to think about the possibility of a closer approach of the historical point of view about the circulation of ideas about what the school should transmit/teach and, at the same time, to know which educational conception would be permeating the training proposal of the school subjects. In this sense, then, this type of source can serve as an

[7] She was referring to Professor Magda Soares, who was initially part of the faculty at the Faculdade de Filosofia and was deputy director to Professor Alaíde Lisboa at the School of Application. Magda Soares (1932-2023) was one of the founders of the Center for Literacy, Reading and Writing, author of several publications, and professor emeritus of the School of Education at UFMG (COSTA, 2021).

> indicator of the social formation project unleashed by the school. This is allowed by means of the questions that can be asked whether in terms of content or discourse, not forgetting to take into consideration aspects related to temporality and space. This, in turn, makes it possible to inquire into what and to whom it served as one of the instruments of the school institutional practice. In this aspect, it is linked to the history of school institutions and, broadly, to the history of educational policies.

The author also emphasizes that from the point of view of school institutions, the contribution of textbooks is also in making it possible to understand the school institution from the inside, because this kind of material presents part of the contents of the school curriculum in what concerns knowledge. Depending on the period in which it is taken as a source, the textbook material can be considered as the supreme carrier of the school curriculum in what concerns the knowledge transmitted in the different areas, because it has become the only reference for teachers and students (CORRÊA, 2020).

The protagonism of the textbook and the constitution of a curriculum based on it were observed in all levels of education at S. A. (School of Application), from the narratives of teachers and former students, who mentioned specific titles of books and other printed materials, as we will see when focusing specifically on the admission, junior high and high school courses.

Textbooks in the Admission Course

The schools developed their own entrance exams[8], and in many cases, as in the S.A., specific classes were created, a preparatory course. Teacher Aloys joined the S.A. in 1955, more specifically in January, to teach the Admission Course. During the interview, although she donated us some copies of math textbooks, she did not immediately recall having used them in her classes. However, at a later point, the lecturer shared with us some memories regarding the books she worked with at the institution. She had kept a few copies of these works, which, she said, were aimed at the admission course offered at the School of Application as preparation for those who wished to enter it. The first was the book Program of Admission, by Companhia Editora Nacional, published in 1956. The other is Curso de Admissão ao Ginásio, 1958, by Antônio de Souza Teixeira Junior, published by Editora do Brasil[9].

The first title above is suggestive and leads us to the legislation then in force. Aksenen (2013) presents a chronology on the national instructions for entrance examinations in which the syllabus for those exams, published by Ordinance 501 of May 19, 1952[10], stands out. The items in the Mathematics syllabus were as follows:

> Whole numbers. Arabic and Roman numerals. Decimal numeration. Fundamental operations on integers. Divisibility by 10, 2, 5, 9 and 3. Proof of the nine and real proof. Prime numbers. Decomposition of a number into prime factors. Greatest common divisor and lowest common multiple of two or more numbers. Ordinary fractions:

[8] The entrance exam was created by the Reforma Francisco Campos for access to the first year of junior high school and was only extinguished in 1971, with the promulgation of Law No. 5692, when compulsory junior high school education was introduced, lasting eight years, integrating primary and junior high school in a single study cycle. Despite legal changes in their form and content, the exams were considered vestibular.

[9] Antonio de Souza Teixeira Junior graduated in Mathematics from the Faculty of Philosophy at USP in 1944, in the same class as fellow textbook author Carlos Galante (GOMES, 2018).

[10] Throughout the existence of the entrance exams, very little variation is observed in the list of syllabus content.

> simplification and comparison. Operations on ordinary fractions and mixed numbers. Fractionary decimal numbers; operations. Conversion of ordinary fractions to decimal numbers and vice versa; periodic decimal numbers. Notions on the legal system of units of measurement. Meter, square meter, and cubic meter; usual multiples and submultiples. Liter; usual multiples and submultiples. Kilogram; usual multiples and submultiples. Brazilian monetary system. Simple problems, including on the legal system of units of measurement (BRASIL, Order n° 501/1952 apud AKSENEN, 2013, p.93).

Aksenen also cites the guidelines regarding the Mathematics exams and stresses that the written tests should propose 10 questions, five "simple, in the form of problems", and five "of immediate practical nature". The oral tests would be on "points drawn from among 20 (twenty) formulated on the subject of the respective programs" (BRASIL, Order 501/1952 apud AKSENEN, 2013, p.92). In relation to written tests, Machado (2002, p.48) presents a test from Colégio Pedro II, 1954, considering this structure. Just as an example, we will highlight two of the questions, one of each of these types:

> 1) Write, in Roman numerals, the difference between the numbers seven million five thousand four hundred and three million two units. [...] 3) Two pieces of the same farm cost Cr$ 8,000.00 and Cr$ 7,000.00, respectively. Knowing that the first piece is 8 meters longer than the second, ask: what is the length of each? (apud MACHADO, 2002, p.48).

Thus, one can perceive the delimitations of these exams in relation to the selected contents, the orientations and, consequently, the structure of the exams, with emphasis on the types of questions (simple and practical). Thus, it is possible to infer about the pedagogical practices performed in the admission courses, as for example, in the S.A. As commented, it was observed, from the narratives, a movement around a vast number of exercises and, considering the particularity of a preparatory perspective, this aspect and the sequence of presentation of the contents stand out when we return to the textbooks indicated by teacher Aloys.

The first of these books, *Programs for Admission*[11], is a collective work, and the part dedicated to the teaching of Mathematics was written by Osvaldo Sangiorgi[12] . Each section of the book is devoted to one of the school subjects, which, in turn, is subdivided into chapters. It is worth noting, as was common in textbook publishing practices, that the reference to the syllabus (in this case, of the entrance examinations) is present in the work as a paratextual element, both with the indicative "according to" and with the presentation of the guidelines for the written and oral tests of each subject.

The Mathematics section consists of three chapters, which cover the points of the programs mentioned above, as can be seen in the *Table of Contents* of the book: Chap. I - Whole

[11] We used the 5th edition, published in 1959. The edition shown by Professor Aloys was the 2nd, from 1956. Although it is recorded on the title page that the 5th edition was entirely revised and expanded, we do not believe that the changes made affect the analysis proposed here. Subsequent editions, especially from the 1960s on, underwent more significant changes regarding the teaching of mathematics due to the Modern Mathematics Movement, as can be seen in the 19th edition of 1968. The teachers responsible for the other texts in this 5th edition were: J.B. Damasco Penna (General coordination of text); Aroldo de Azevedo (Geography); Joaquim da Silva and José Arruda Penteado (Brazilian History); José Cretella Júnior (Portuguese).

[12] Osvaldo Sangiorgi was born on May 9, 1921 and died on July 7, 2017. He was a mathematics teacher, textbook author, and leader of the Mathematics Teaching Study Group (GEEM).

numbers. Fundamental operations. Model problems. Divisibility. M.D.C. [and] M.M.C.; Chap. II - Fractional numbers. Fundamental operations. Decimal numbers.; Chap. III - Legal system of units of measurement. Decimal metric system. Brazilian monetary system.

Each of these chapters is composed of *paragraphs*, in the sequence listed in the index for each chapter, detailing the announced topic and corroborating the list in the exam syllabus. For example, *the first paragraph* of chapter 1 deals with: whole numbers; decimal numeration; Arabic numerals and Roman numerals. The presentation of the contents in each of these parts is given by means of an overview with examples, followed by sections for the tasks. This block of activities begins with the so-called *Model Exercises* and *Quiz*. The *Exercises on the topic* covered appear as *the third paragraph*[13] . It is interesting to note that in the first block of model activities the solutions follow right after each exercise, leading us to believe that they served the function of examples to be presented by the teachers. Another highlight is the nature of the questions in the part called *Questionnaire*. They are questions like: "What is Arithmetic?"; "Why is our numbering system called decimal? Unlike the previous block, which serves as a model for solving the part intended for exercises on the topic covered, this section points to the oral exams.

In the second work mentioned by teacher Aloys, *Gymnasium Admission Course*, the perspective of task execution is even more evident, since the book only brings proposed exercises, a common characteristic in the Brazilian editorial market for the printed materials destined to entrance examinations. In relation to the official programs, the sequence of presentation is also the same. The particularities of this book are also important for the understanding of our problematizations.

Each block of exercises indicates the content to which it refers, and, in all cases, each separation proposed by the author for the list of contents presents at least two blocks of exercises and, in some moments, one can notice a resumption of the contents. Some of the blocks are composed of multiple-choice exercises and, in some cases, the presence of model exercises is observed, with the use of this expression or indicated as an *example*. Last but not least, it is worth mentioning that each of the activity blocks is detachable and displays a header. This materiality model can provide an interesting practice of task execution by students and correction by teachers.

Considering, therefore, both volumes shown by Professor Aloys and the indications made by us, it is possible to make inferences about the practice in preparation for the entrance exams. It is clear the presence of a proposal based on task resolution with faithful attention to the exam syllabus and its respective guidelines regarding the types of activities in the exams.

Gymnasium course: three authors and their books

The testimonies of teacher Aloys also reveal movements in the junior high school. As recorded in the institution's yearbook, she also worked at this level, in all grades, at least until 1967.

Aloys reported using Jacomo Stávale's book *Elements of Mathematics* and gave the first author of this article another book by this author, *Problems of Mathematics*, for the first grade of junior high school, 1954. Both volumes were written based on the new teaching programs, established by the Ordinance of 1951. It is worth noting that Jacomo Stávale has been an author of mathematics textbooks since the 1930s, with collections that were part of the Francisco Campos and Gustavo Capanema Reforms. Companhia Editora Nacional published his books, in the *2nd Series - Textbooks, of the Brazilian Pedagogical Library.*

[13] For example, Exercises on numeration (VALENTE, 2008).

Miorim (2006) highlights an important aspect of Stávale's perspective, in view of the belonging of these books to a publishing investment given as renovating, which contributes to the reflection on the functions of textbooks in S.A.:

> Although the discourse of the publishing house, especially in the words of Fernando de Azevedo, was to produce textbooks with renovating characteristics that could constitute "an offensive against traditional school literature, vitiated, outdated and badly presented," Jacomo Stávale's books, record-breakers in this segment of the publishing market, did not have these characteristics. Although his works present the contents proposed by the Reforma Francisco Campos, professor Jacomo Stávale does not assume the methodological orientations proposed by the "new teaching orientation". The author agrees that it would be convenient that "the four branches of elementary mathematics" be approached "in parallel since the first year of the gymnasium course" but considers that "the simultaneous teaching of these four branches cannot be done in a haphazard way, as some authors claim" (Stávale, 1932, p. VIII[14]). For this reason, Stávale presents in his books the subjects in a compartmentalized manner, "like the books of a library" (p. VIII). Other aspects of Stávale's work - use of the deductive method in the first year of secondary school, excessive use of mathematical language, without articulation with other languages, non-use of the concept of function as a unifying element, use of applications only in exercises at the end of some chapters - confirm his resistance to the introduction of renovating elements (Souza, 1998[15]). (MIORIM, 2006, p.12).

In fact, already in the first chapter of Elements of Mathematics, of the first year, we perceive the author's didactic option. In the beginning, Stávale exposes a series of definitions and explanations; then, he proposes oral exercises about numeration, with some "models" of activities to be followed. Soon after, he presents a list of exercises without the respective solutions. Stávale also presents problems, mostly contextualized, and solved, followed by a list of questions interspersed with solved exercises. In general, each subject covered in the book is approached initially with the definition, followed by some examples that are mostly direct applications, but are sometimes presented as problems. In addition, there are numerous oral exercises and problems to be done in class, making a total of 1000 activities. The large number of tasks is also a feature of the problem collection. For example, the first-grade book given to the first author of this text contains 1160 exercises with answers.

As already mentioned, the testimonies of the former students confirmed that the foundation of the mathematics classes was the large number of exercises, corroborating the structure that can be observed in the mentioned books.

The interviewees also recalled that the school used books by Osvaldo Sangiorgi and Ary Quintella.

In Mathematics classes we used Osvaldo Sangiorgi's book in the first, second, third and fourth grade (Camélia, former student).

[14] STÁVALE, J. Second year of mathematics. São Paulo: Companhia Editora Nacional, 1932.

[15] SOUZA, R. M. de. A study on the influences of the First International Movement for the Modernization of Mathematics Teaching in Brazilian textbooks. Final report of scientific initiation to FAPESP. Campinas: Unicamp, 1998.

Osvaldo Sangiorgi's and Ary Quintella's books were the most used Math books in the Gymnasium. used most in the Gymnasium (Carlos Braga).

I couldn't say for sure which books I used, but there were many, like Alberto Serrão, Ary Quintella and Osvaldo Sangiorgi among others. [...]. The books adopted by the school, it seems to me, were the ones by Ary Quintella and Osvaldo Sangiorgi.

[...]I believe that Ary Quintella's book was the great Math book of that time, because it had Math and Design. (Paulo Wanner).

Companhia Editora Nacional also published Osvaldo Sangiorgi's books, of São Paulo, the same publishing house of Jacomo Stávale's works. Companhia Editora Nacional became the largest publishing house in São Paulo, dedicating itself to the production of didactic and pedagogical printed matter. In the 1950s, it reached its largest production thanks to the expansion of the network of gymnasiums (DUTRA, 2004).

Valente (2008) comments on the performance of Sangiorgi and his strong participation and the publishing house through which his books were published in the Brazilian publishing market.

> The access to newspapers, the participation in national meetings for the discussion of mathematics teaching programs, and the systematic presence with articles in pedagogical magazines of national reach were essential elements for the consolidation of Osvaldo Sangiorgi as a reference for the teaching of mathematics. The success of his books attested to this. Sangiorgi's collection, in the three years following the release of the first volume for the first grade, was very well received. The print-run continued to increase, reaching, in 1957, for the first volume, the mark of 100 thousand copies. From then on, it remained at this level annually until 1963, the year in which, according to the archives of Cia Editora Nacional, the 134th edition of the book was published. [...] An even greater editorial success occurred after 1963, with the launching of a new collection for high schools: those were the times of Modern Mathematics (Valente, 2008, p. 9).

Valente (2008) also points out that, in the 1960s, the author was seen as a mathematical and didactic authority. He adds that Sangiorgi conducted joint actions with Cia. Editora Nacional and the Secretariat of Education of São Paulo, in which he promoted meetings and courses for teachers.

The other author mentioned, Ary Norton de Murat Quintella, although from São Paulo, spent most of his professional life in Rio de Janeiro. Valente (2008a) points out that Ary Quintella's professional career allowed him to publish his work through the Companhia Editora Nacional, and that his mathematics textbooks were transformed into educational best-sellers, reaching many editions in the early 1950s. He also points out that Quintella guaranteed the publishing house a large share of the Rio de Janeiro market, rivaling the Rio de Janeiro publishing houses, which had dominated the production of Mathematics textbooks since the end of the 19th century.

Works by Ary Quintella and Osvaldo Sangiorgi were analyzed by Thiengo (2001), who tried to understand how the passage from "Traditional Mathematics" to "Modern Mathematics", an international teaching movement that penetrated Brazil in the 1960s, occurred through the textbooks of both authors. The researcher concluded that both authors appropriated in different ways the proposals disseminated[16] at that time. When speaking of Modern Mathematics,

[16] While Sangiorgi was very influenced by the Americans, having incorporated elements of their recommendations to the books he had previously produced, Ary Quintella demonstrates, in his works, resistance

Professor Clemenceau, in a conversation after his interview, reported that, when teaching a class at the School of Application, at the invitation of Professors Alaíde and Magda, he chose the content of "sets", in which he could work with notions of Modern Mathematics, even if without explicit mention of the modernist movement. The subject was familiar to the teacher due to his constant study and improvement. He evaluated that he had worked very well with classical mathematics in his classes by using modern mathematical concepts.

At the junior high school level, therefore, we observe again the presence of practices based on procedures, based on numerous exercises, and a balance between an approach loaded with the tradition prevailing in secondary education at least since the 1930s, seen in Stávale's books, and the renewal movements through the appropriations of the Modern Mathematics Movement, through the authors Ary Quintella and Osvaldo Sangiorgi[17].

The textbooks in the high school course at the School of Application

At the end of 1957, the first class finished the 4th grade of the Gymnasium, and, in the following year, the Gymnasium of Application of the Faculty of Philosophy of the University of Minas Gerais was converted into the School of Application of the Faculty of Philosophy of the University of Minas Gerais.

As for the books used in high school, Professor Clemenceau referred to the materials that the teachers produced*: I wrote a book with very difficult exercises, but the boys were great, we could squeeze them, and they would answer. Mário de Oliveira authored several books that we used*[18]*. I wrote part of the book for the first year of the Scientific and exercises about limits. I also wrote a book about complex numbers. At Scientific we used a book by four authors from São Paulo, I don't remember their names.*

During the collective interview, the former students also remembered the use of materials authored by teachers Mario de Oliveira and Clemenceau. *Mathematics was a workbook. Each teacher had his own workbook, Mário de Oliveira's, and Clemenceau's (Luiz Santana). Clemenceau used the school's mimeograph and distributed the chapters for you to study. There was the theoretical part, described, and there were also problems to solve (Carlos Braga).*

Professor Clemenceau gave the first author of this article some materials of his authorship, some of them in partnership with Professor Mário de Oliveira. One of them was volume I of Algebra and Analysis, 8th edition, 1963, by Mário de Oliveira and Clemenceau Chiabi Saliba. Besides this book, he showed a black hardcover workbook, Exercises about Limits, consisting of a collection of exercises solved by elementary processes, from 1962, and a mimeographed workbook of algebra exercises, Equations of the 2nd degree, from 1963.

The indication of this type of material is relevant to understand the practices of the teachers at the College, for two interrelated reasons. The first one refers to the genesis of the text, because, in general, they are productions elaborated from class notes and

to change. According to Thiengo (2001), Quintella faced pressures from the scientific community, from the State Departments of Education, from publishers, and from groups of teachers, and he chose to make a partial and cautious appropriation of Modern Mathematics, without changing his conceptions about Mathematics. Thiengo (2001) concludes that Sangiorgi and Quintella positioned themselves in relation to Modern Mathematics according to their individual trajectories, their relations with Mathematics, and the academic community of the time.

[17] While Sangiorgi was very influenced by the Americans, having incorporated elements of their recommendations to the books he had previously produced, Ary Quintella demonstrates, in his works, resistance to change. According to Thiengo (2001), Quintella faced pressures from the scientific community, from the State Departments of Education, from publishers, and from groups of teachers, and he chose to make a partial and cautious appropriation of Modern Mathematics, without changing his conceptions about Mathematics. Thiengo (2001) concludes that Sangiorgi and Quintella positioned themselves in relation to Modern Mathematics according to their individual trajectories, their relations with Mathematics, and the academic community of the time.

[18] We can cite, for example, the other volumes of the collection Algebra and Analysis, with editions published between the 1950s and 1960s by the Mário de Oliveira Course, in a series called Vestibular Publications.

experiences lived and practiced. Batista (1999, p.537), when dealing with the difficulties of conceptualizing the textbook in Brazil, associates this production process to the different means of reproducing the teaching material through the school "press". In addition, Matos (2020) states that local editions of didactic texts, as is the case of those by professors Mário and Clemenceau used in School of Application, allow us to get closer to the local culture, usually obscured in widely circulated books.

The second reason is related to the implementation of the official programs and the different blocks of content for the second cycle of secondary school. The productions indicated by Clemenceau address specific subjects of the high school that are present in the official programs and, from the 1960s on, through the *"Suggestions for a Program Script for the Mathematics Chair," a text published by the Mathematics Teaching Study Group* - GEEM. Thus, we can establish a relationship between syllabuses, teaching practices and textbooks in the School of Application. In fact, secondary education in the Campos Reform was separated into two cycles, the Fundamental, lasting five years, and the Complementary, lasting two years. Decree no. 21,241, of April 4, 1932, indicates the obligation of the complementary course for candidates to higher education and presents a list of subjects differentiated according to the nature of the courses. The textbooks published to attend the Campos Reform were mostly elaborated in a collection format for the five years of the Elementary course and in thematic volumes to attend the Complementary Course. With the changes made in the curricular structure of the Capanema Reform, most of the collections for the Fundamental cycle were adapted to the four years of the Gymnasial cycle and few authors ventured into writing collections for the Collegiate cycle, with thematic books prevailing[19].

What is observed in the last three grades, therefore, are practices of this fragmentation by subject, reinforcing the course as propaedeutic. As reported by Clemenceau, his performance took place, most of the time, in the Scientific course, and his speech characterizes not only his own practice, but that of the School, with the offer of a preparatory cycle for the vestibular exams.

Professor Clemenceau's statement on this issue emphasized: "*The third-year students went straight into the vestibulars of the best universities. They didn't take courses, they went straight in. They left very well prepared. A good school gives conditions for the student to have the privilege of choosing where he wants to study.* Like Clemenceau, Professor Paulo Wanner reinforced the argument: *It was a famous school in Belo Horizonte, because all the students that studied at the School of Application did not take the "cursinho" to enter UFMG. They took the vestibular and were successful because they had already had access to all the contents that the University had to cover.* In this way, the School of Application, which was originally just a training unit for the students of the Didactics Course, became a preparatory school for higher education courses, which gave it more visibility in the city of Belo Horizonte.

Returning to the books donated by Clemenceau, the first volume of the work Algebra and Analysis presents in its summary the contents: progressions, logarithms, exponential equations, logarithmic equations, and summation symbol. This book, authored by professors Mário de Oliveira and Clemenceau, presents the order of the curricular suggestions suggested by GEEM and approved in the IV Brazilian Congress of Mathematics Education in 1962, later published on January 19, 1965, in the Official Gazette of the State of São Paulo. Professor Clemenceau's workbook Exercise on Limits, which contains 18 pages of exercises solved by elementary processes, presents the definition of limits and then a list of 54 solved exercises. In this list, we find demonstration exercises that use the definition of limit. In addition, there are those on lateral limits, trigonometric limits, limits of irrational functions, limits of rational functions, among others.

[19] For example, Francisco Antônio Lacaz Netto was the author of several thematic textbook titles.

Analyzing the forms and the work methodology according to Clemenceau's account, we can see the coherence of the material with his exposition. Initially, the teacher explained the subject and solved some activities; progressively, he increased the difficulty level of the exercises. To ensure that the student would not forget the content, the teacher prepared a workbook with a wide repertoire of possible exercises on that subject. Thus, the didactic material ended up being a "complement" to the class. In this case, it is possible to think of the student as a repeater, since he was given access to the resolution model of a certain exercise, which could be replicated in all other similar activities.

Final considerations

This study about the reception and use of textbooks in the school environment of the School of Application of UMG/UFMG in the period 1954-1968 was based on the dialogue that we tried to establish by examining together sources of varied nature: reports of former teachers and students collected with the methodology of Oral History, legislative documents and textbooks were analyzed in the light of several works that focused on Mathematics teaching at that time, predecessor of the great dissemination of the Modern Mathematics movement in Brazil.

At that time, a relevant characteristic of education in the country was the small portion of the population that had access to the levels of education after elementary school; in that context, the filter represented by the entrance examinations was strong, difficult to pass and only viable, above all, for the more favored socioeconomic classes.

The School of Application, conceived as a place of practice for future teachers attending the UMG/UFMG, received students who passed the rigorous selection of the Gymnasium Admission Exam. In its first years of operation, the candidates for a vacancy had the possibility to attend a preparatory course offered by the school itself.

The research on the educational practices in Mathematics at the School of Application highlighted the existence of a teacher-centered teaching, with a less active role for the student; with emphasis on the performance of a very large number of exercises and approval criteria based on partial, final and second season exams, as governed the Brazilian gymnasium legislation; with teaching work performed individually by each teacher and rare exchanges among peers. Connecting all these aspects are the textbooks, fundamental for teaching and evaluation, which becomes clear when we carefully analyze the reports of former students and teachers.

As far as this material is concerned, we noticed specific attributes of the textbooks for the Admission, Gymnasium and Collegiate courses at the School of Application. The analysis of the books used at the school shows, in the first case, the basis in training for the questions formulated from the Admission Examination syllabus and the presence of material produced especially for the exams in São Paulo.

In relation to the junior high school course, three authors of the Companhia Editora Nacional, also from São Paulo, are among those specifically remembered by the former students - Jácomo Stávale, Osvaldo Sangiorgi and Ary Quintella -, with works containing huge lists of exercises accompanied by models to guide the resolution by the students. This clearly characterizes the teaching of mathematics based on procedures and on the repetition of tasks.

Finally, the high school level of mathematics taught in the School of Application was portrayed, in the speeches of students and professors, with emphasis on its success in preparing for university entrance examinations, to which only a small percentage of students had access. At this level, it is interesting to note the use of textbooks produced locally, in Belo Horizonte,

by authors who were teachers at the College, such as Professor Clemenceau. These authors seem to have tried to mark their presence in the educational field when there was this opportunity, considering the small number of authors who produced Mathematics textbooks for the high school level.

In this paper, by noticing the fundamental role of textbooks in the educational practices of Mathematics at the School of Application, we tried to articulate, in the study of these works, the forms of organization of the educational field in the investigated period, the structure of the works involved and their reception by students and teachers; our intention was to offer a contribution to the History of Education.

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