



## University reform and the Department of Mathematics at UFMG (1969-1977)

### A reforma universitária e o Departamento de Matemática da UFMG (1969-1977)

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#### Abstract

This article discusses the trajectory of the Department of Mathematics at UFMG in its first years after the university reform of 1968. A historical overview of this university before the reform, highlighting the background of that Department, is initially presented. Based on institutional documents and interviews with former professors, the objective was to investigate, in the moments after the reform, three specific and interrelated aspects essential to university modernization: teacher qualification, the work regime and the implementation of postgraduate courses in math. The master's degree in Mathematics at UFMG, implemented in 1971, resulted from the efforts of several people and enabled the qualification of the Department professors at UFMG itself. The link between departmental structuring and graduate studies became evident: the success of the postgraduation studies in Mathematics in UFMG resulted from the Department's internal policies that stimulated the qualification of teachers by conducting a master's degree in mathematics.

**Keywords:** University Reform; Department of Mathematics at UFMG; History of Mathematics Education; Teacher Qualification; Postgraduation Studies in Mathematics.

#### Resumo

Este artigo aborda a trajetória do Departamento de Matemática da UFMG em seus primeiros anos após a reforma universitária de 1968. Apresenta-se inicialmente um panorama histórico dessa universidade antes da reforma, com destaque para os antecedentes do referido Departamento. Com base em documentos institucionais e em entrevistas de antigos professores, objetivou-se investigar, nos momentos depois da reforma, três aspectos específicos e inter-relacionados essenciais à modernização universitária: a capacitação docente, o regime de trabalho e a implantação da pós-graduação em Matemática. O mestrado em Matemática na UFMG, implantado em 1971, resultou de esforços de várias pessoas e possibilitou a capacitação dos docentes do Departamento na própria UFMG. Ficou evidente a vinculação entre a estruturação departamental e a pós-graduação, cujo sucesso resultou de políticas internas do Departamento que estimularam a capacitação dos professores pela realização do mestrado em Matemática.

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**Palavras-chave:** Reforma Universitária; Departamento de Matemática da UFMG; História da Educação Matemática; Capacitação Docente; Pós-graduação em Matemática.

## Introduction

The 1968 reform, as Federal Law 5540 of November 11, 1968, became known, radically modified the higher education previously developed in Brazil through the implementation of many and diverse measures that characterize the scenario still in force today in university institutions. The 1968 law and the various legal documents that preceded it, that is, the reforms of the 1960s and 1970s, led, in a context of developmentalism and modernization, but also of repression and violence, to profound changes in relation to the autonomy of universities, their structuring, the careers of professors and the admission of students. The reforms led to the expansion of undergraduate programs, fostered research and expanded and regulated the incipient graduate programs previously present in the institutions. New buildings were built on campuses, laboratories were created and equipped, and the teaching profession was institutionalized through the full-time regime and exclusive dedication (Cunha, 2003; Motta, 2014).

For Motta (2014), although they were implemented during the military dictatorship established in Brazil as of 1964, the changes in the university had been debated and proposed in the country since the 1950s and two fundamental points predominated in these debates. The universities needed to change because they were founded on the archaic model of professorships, in which powerful professors had lifelong positions and produced little knowledge, and professors in the lower ranks acted in an apathetic way due to dissatisfaction with their working conditions. The second point concerned the country's transformations represented by population growth, urbanization, and the secondary education network in the 1950s-1960s, which configured a scenario in which the number of openings in universities was much lower than the demand for higher education. Motta (2014) emphasizes that, while there was convergence on the need for modernization and expansion of knowledge production, political-ideological projects in dispute diverged on the directions to be taken. Especially the students, whose perspective had a socialist and revolutionary nature, promoted debates for university reform before 1964. According to Cunha (2003), the project of a pro-democratization university reform was born and developed within the student movement, and it was only on the eve of the military coup of 1964 that a significant contingent of professors assumed this project.

The right-wingers, on the other hand, wanted to change higher education to make it more efficient and productive, with economic development and the modernization of the public machine as a horizon. These groups, however, questioned the gratuity of education and advocated charging fees from students who could pay (Motta, 2014).

In this framework, it is essential to emphasize the strong presence of the development and modernization perspective, originated mainly in the social sciences of the United States. In Brazil of the 1950s and 1960s, the political and academic debate about modernization and national development had immense prominence. Education was inserted in the trajectory of

modernization, with the University as one of the inherent points in this trajectory (Oliveira & Faria Filho, 2019). Education was "one of the priority sectors of the modernizing agenda, for its multiplying effects and for instilling values in young people" (Motta, 2014, p. 10). Effected in the military regime implanted since 1964, the reform of higher education integrated the set of strategies for reforming the state and public administration in search of economic modernization (Vieira, 2016).

There are many studies that focus on different aspects of the reform and its reflexes on Brazilian education in general, for example Mendonça (2000), Saviani (2008), Cunha (2003, 2007), Motta (2014), Lüdke (2005), Alves and Oliveira (2014), Vieira (2016). There are also those dedicated to examining the reform in a specific context, such as the Federal University of Minas Gerais (Veiga, Albano, Somarriba & Barbosa; 1987; Oliveira & Faria Filho, 2019), who address the ways in which reform policies were absorbed in that institution. The work we present here falls within this line of research on a particular environment of the same University, the Department of Mathematics of the Institute of Exact Sciences (ICEx), born precisely after the 1968 reform. We examine the background of this department inside UFMG and discuss some results of our investigation about the changes brought to the mathematics teachers of the institution by the university reform.

The sources we used were of two types: written documents and material from two interviews with retired professors from the Department. The written documents were the minutes of the meetings of the Board of the Mathematics Department in the period 1969-1977, some class diaries of Mathematics undergraduate courses, and lists of former students in the site of the Graduate Program in Mathematics of UFMG. The interviews with professors Maria Suzana Balparda de Carvalho and Roberto de Maria Nunes Mendes, conducted by the second and third authors of this article, were filmed in dependencies of the current Department of Mathematics, respectively on 06/10/2017 and 20/09/2017. Suzana and Roberto accepted the invitation for a conversation based on topics related to the early years of the Mathematics Department at ICEx and authorized us to use their testimonies in our research. We also worked with a text written by a third retired faculty member of the Department, Pedro Mendes, who answered, in April 2021, questions sent to him by email by the second author of this paper on the same occasion. Pedro also granted us, the authors, permission to use his written testimony.

In the use of personal statements, we took as references researchers who theorize about Oral History, such as Alberti (2006), Garnica (2010) and Portelli (2010, 2016)<sup>4</sup>. According to these authors, we emphasize that these sources are intentionally produced by the researchers/interviewers, coauthors of the interviews, who create a narrative space for the

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<sup>4</sup> Due to space limitations, we will summarize here the ideas of these authors with reference to the four points to be considered listed by Portelli (2016, p. 12), which make up the set of relationships that underpin Oral History: the relationship between interviewees and interviewers; the relationship between the time of the dialogue and the historical time discussed in the interview; the relationship between the public and private spheres; the relationship between the orality of the sources and the historian's writing. The interested reader will be able to delve deeper into the theme based on the works cited.

interviewees, who would not make their accounts equally at another time, another context or for another interviewer. In this work, it is important to consider that interviewers and interviewees share an institutional space - the Department of Mathematics at UFMG.

On the other hand, regarding the UFMG institutional documents on which we rely, we must remember that they were produced for other purposes, namely those of an administrative and academic nature at the University. These documents and, in particular, the minutes of the Department meetings, which helped us the most, are not neutral; they bear the marks of their time and of their authors and, as such, they were contextualized and received a critical look from us, as Bacellar (2010) recommends.

Thus, based on institutional written documentation represented by minutes, class diaries and personnel lists, and using reports from former professors, we focus on three specific and interrelated aspects essential to modernization: faculty training, the work regime and the implementation of graduate studies in Mathematics. The reference period begins in 1969, with the implementation of the departmental structure and the establishment of the Department of Mathematics at UFMG. The final time frame is 1977, year in which the Department was already totally modified, with the renewal of more than half of the original faculty and the consolidation of the Master of Mathematics formally implemented in the University since 1972. Initially, we trace an overview of the events that preceded the creation of the Department of Mathematics in the context of the university reform at UFMG.

## **Before the Mathematics Department at ICEx**

UFMG, under the name University of Minas Gerais (UMG), was born in 1927 from the merger of four previously founded isolated schools - Law (1892), Dentistry (1907), Medicine (1911), and Engineering (1911) - as a university linked to the state government of Minas Gerais. Other units were added in the following years. Particularly in the second half of the 1940s, other free schools created in Belo Horizonte were incorporated into the institution: The School of Architecture, in 1946, the School of Philosophy and the School of Economic Sciences, both in 1948. The University was federalized in 1949 and, after the integration of other units along the years (Nursing, Veterinary, Library Science, Fine Arts, among others), its name was changed to Federal University of Minas Gerais (UFMG), by determination of the federal government, in 1965.

In the beginning of the 1960s, the teaching of mathematics at the University took place in several schools: Engineering, Architecture, Economic Sciences and the Faculty of Philosophy, the latter being the seat of the Mathematics course, which graduated licensees and bachelors. From 1965 on, these schools were joined by another Mathematics teaching institution – University College<sup>5</sup>.

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<sup>5</sup> The University College of the UFMG was created in 1965 and offered only the third grade of high school, the last year of high school at the time. It was a "pedagogical experience that would allow the student to mature, to have a greater awareness of the national and regional reality, preparing him for higher education in better conditions of development (intellectual, social, cultural)" (Collares, 1989, p. 172).

A panorama of UFMG up to the 1960s (Veiga et al., 1987) shows an institution in which the central administration played a small role due to the high degree of autonomy of the schools, in which the congregations decided on the most varied matters, totally dominating the undergraduate and extension courses. In the units, the main decision makers, the professors held the power of direction and the professors were mostly liberal professionals who dedicated part of their time to teaching. It was common for the same professor to work in more than one school, for example, those who taught mathematics at the School of Engineering and at the Faculties of Philosophy and Economic Sciences. The organization of the teaching career was based on the chair, whose holder had total control over the assistant professors, as well as on the school congregations.

In the 1940s and 1950s, the University had a few researchers in the biological and exact sciences, who, mainly through personal efforts, obtained resources to carry out their work. However, research was not recognized as an essential activity and the institution did not have the necessary organization to accommodate it. Until the early 1960s, UFMG didn't have an institutional structure that would enable the operation of graduate studies in a systematic way. In the few places where it existed, it was not structured in regular courses and the titles were granted upon the presentation of a dissertation or thesis in front of juries composed for that purpose.

In this scenario, UMG/UFMG was a confederation of schools with almost total autonomy, and three of them - Law, Medicine and Engineering -, from which most of the deans originated until 1963, were the ones with the most weight in decision-making.

Since 1964, federal legislation, through several decrees, made changes regarding students, faculty and the structure of higher education. Before the 1968 reform, student representations were strongly repressed by decree-laws 4464/1964 and 228/1967. The university teaching career was created by Law 4881-A of 1965; the duplication of means for identical ends was forbidden (Decree-Law 53 of 1966); departments were defined as basic units of higher education (Decree-Law 252 of 1967); professorships were abolished (Law 5539/1968). Law 5540/1968 reinforced previously established points, such as the extinction of the chairs and the institution of the departments as basic units, but also made additions to the previous alterations. The creation of the basic cycles, the normatization of the collegiate bodies for the administration of academic activities, the strengthening of the central power, the changes in the vestibular, the regulation of student representation, and the institutionalization of research, among others, are prominent components of the 1968 reform (Brasil, 1968).

At UFMG, in the period 1964-1967, during the rectorship of Aluísio Pimenta<sup>6</sup>, initiatives had been implemented that triggered the university reform before the movement of

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<sup>6</sup> Aluísio Pimenta (1923-2016) was born in Peçanha (MG). He graduated in 1945 in Pharmaceutical Chemistry at the School of Dentistry and Pharmacy of the University of Minas Gerais (UMG), later named Federal University of Minas Gerais (UFMG). He earned his doctorate in Organic and Biological Chemistry from UMG in 1950. He was a full professor at the School of Pharmacy and the School of Philosophy of this university, where he joined as professor in 1947 and became dean in 1964. He was rector of UFMG until February 22,



the federal government that culminated in Law 5540/1968. A professor in two faculties, Pharmacy and Philosophy, Pimenta proposed in his inaugural speech the internal restructuring of the University, through the creation of central institutes, which, in his words, would be "the most efficient weapon against the particularism of the schools" (Resende & Neves, 1998, p. 45). The central institutes, according to the American model, should have their buildings built on campus and would house teaching and basic research protected from the external environment, while the professional schools, dispersed in the urban fabric, would meet the more immediate demands of the community, the labor market and businesses. According to Cunha (2007, p. 116), before his choice for rector, Aluisio Pimenta had visited universities in the United States, "inspiring source of the modernization of Brazilian higher education," and, on his return, had known the University of Brasilia, created in 1961 and inaugurated in 1962, "its most advanced national version." Pimenta sought to follow the UnB model for the modernization of UFMG.

According to Veiga et al. (1987), the UFMG Statute approved in 1963, in the rectorship immediately preceding Pimenta's, provided for the installation of the Central Institutes of Physics, Chemistry, Mathematics, Biological Sciences, Geological Sciences and Public Law and Political Sciences. During Pimenta's administration, committees of professors were formed to plan the new units, which would have the following functions: a) centralizing all the disciplines considered basic, both those that had been taught at the professional schools and colleges and those of the undergraduate courses to be developed at the institutes themselves; b) performing the functions previously performed by the School of Philosophy at the undergraduate level; c) implementing graduate education, linked to research activities, in order to create conditions for specialization and improvement within UFMG itself.

After a few months of work by the commissions, coordinated by the Center for General Studies, in February of 1966 it was decided that priority would be given to the Central Institutes of Mathematics, Physics and Chemistry. These were, in fact, the only central institutes installed during Aluisio Pimenta's<sup>7</sup> administration. It is fundamental to stress that the reforms proposed by the rector were not equally accepted by the university community, which had some pockets of adherence and others of resistance to the changes. Veiga et al. (1987) point out a political motivation for the prioritization given to the central institutes of exact sciences. The project involved three departments previously existing in the Faculty of Philosophy (FAFI), those of Mathematics, Physics and Chemistry, in which Aluisio Pimenta had allies among professors of the humanities and young professors of the exact sciences who had qualified for research abroad and were unable to develop their

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1967, when he was compulsorily retired by the Military Junta that held the Presidency of the Republic. As a result of the Amnesty, he was reintegrated to the institution in 1981 (Resende & Neves, 1998).

<sup>7</sup> In his statement of reasons for the priority for the three Central Institutes, the rector listed three reasons for the decision: the important potential contribution of these three sectors to industrial and technological development programs, the fact that the three institutes encompass the same schools and faculties, which would facilitate the organization of courses and programs, and the exceptional rapport among the committees of these institutes (Veiga et al., 1987).

activities. The latter saw the reforms as an opportunity to carry out their research. At the same time, the project implied profound modifications in the structure of the School of Engineering, which strongly resisted the changes.

Therefore, undermining the power of this School, with the practically total support of the FAFI, by transferring professors, equipment and financial resources to the Central Institutes of Mathematics, Physics and Chemistry was a significant political gain for the rectory and a trump card for the Reform plan (Veiga et al., 1987, p. 26).

In 1965 and 1966, the UFMG Statute was approved, which provided for the three central institutes. Aluisio Pimenta intended to be led to a second term, in which he would continue the reforms, and his name was part of the triple list from which the federal government would choose his successor. However, with the changes that had taken place in the national political scene after the military coup in 1964, the groups at the University that opposed the innovations managed to articulate themselves to guarantee the choice of the vice-chancellor for the outgoing administration. This professor, Professor Gerson de Britto Mello Boson<sup>8</sup>, from the Law School, whose name was also on the triple list, was quickly appointed (Veiga et al., 1987). According to these authors, who investigated the minutes of the meetings of the University Council during the new administration, the schools that felt most affected by the reform began to strongly criticize the creation of the central institutes. In particular, professors from the schools of Architecture and Engineering expressed their disbelief "that another kind of professional could teach the basic subjects, especially mathematics, to their students" (Veiga et al., 1987, p. 30). Thus, these professors resisted the transfer of their disciplines to the central institutes of Exact Sciences until 1969, when they were forced to accept it as a result of Law 5540.

In an interview in 1988, former Dean Gerson Boson, when asked about the deviations in the directions of UFMG's restructuring after the imposition of the 1968 reform, emphasized the central role of the Central Institutes in this restructuring, and declared that they were preserved by the reform decreed by the federal government (Resende & Neves, 1998). The three Central Institutes functioned on the University campus during the 1967 and 1968 school years, and we located some class diaries identified on their covers as belonging to the Central Mathematics Institute. These diaries recorded subjects taught annually to students in Mathematics and Physics by professors who worked in the School of Engineering and the School of Philosophy. The testimony of Maria Suzana Balparda de Carvalho, a student of the Bachelor of Mathematics in 1965-1968, later a faculty member of the Mathematics Department of the Institute of Exact Sciences, corroborates our perception that the courses that started to function at the Central Mathematical Institute on the university

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<sup>8</sup> Gerson de Britto Mello Boson (1914-2001) was born in Piracuruca, Piauí, Brazil, and graduated from the UMG Law School in 1944. In 1952, he became chair of Public International Law at the UMG Law School. He was vice-chancellor of UFMG from 1964 to 1967, and became chancellor on February 22, 1967, after the compulsory retirement of Aluisio Pimenta. Boson was also compulsorily retired by the Military Junta during his mandate as rector, on October 13, 1969. After the Amnesty, he was reintegrated to the UFMG in 1980 (Resende & Neves, 1998).

campus were only those previously housed at the Faculty of Philosophy. Suzana recalled the change of the course, starting in her third year as a student, to the new school

*And we came here; Physics, Math and Chemistry came. (...) So I had class here. We were here.... Theoretically the Engineering Mathematics classes were already the responsibility of the Mathematics Institute, only that they only came here to the campus several years later, about 4 years later, I think (Interview by Maria Suzana Balparda de Carvalho, 06/10/2017).*

The experiment of maintaining the three institutes of exact sciences lasted only two years. Still in 1968, they merged into a single school, the Institute of Exact Sciences (ICEx), and the faculty members became part of the departments of Mathematics, Physics and Chemistry. According to the management report of Dean Marcello de Vasconcellos Coelho<sup>9</sup>, successor of Dean Gerson Boson<sup>10</sup>, prior to Law 5540, on February 28, 1968, the UFMG restructuring plan was approved, by which the three institutes would be aggregated to constitute the new unit, the ICEx (Resende & Neves, 1998).

### **The Department of Mathematics: attributions arising from the university reform and initial movements**

The Department of Mathematics was formed by the reunion of a very large number of professors, who previously belonged to the faculty of different units of UFMG: School of Engineering, School of Economic Sciences, School of Architecture, School of Pharmacy, School of Philosophy, and University College. Transferring to the ICEx, located in the Pampulha campus, at that time considered too far from the central region of Belo Horizonte, was not a decision accepted calmly by all the professors. An excerpt from Suzana's narrative highlights this aspect of resistance. She mentioned as an example Professor Edmundo

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<sup>9</sup> Marcello de Vasconcellos Coelho (1930-2004) was born in João Pessoa, Paraíba, and graduated in Medicine from the Federal University of Pernambuco in 1954. He got a PhD in Parasitology from UFMG in 1967. He was dean (1969-1973) and director (1975-1979) of the Institute of Biological Sciences at UFMG (Resende & Neves, 1998). Available at <https://www.ufmg.br/online/arquivos/000850.shtml>. Accessed on 15 Nov. 2021.

<sup>10</sup> According to Veiga et al. (1987), Boson's administration was marked by comings and goings in relation to the reforms. On one hand, the rector himself was against them, and many professors, believing in the possibility of reversing them, acted in this direction. On the other hand, there were many professors in favor of a modernization of the University, linked to Dean Pimenta, who mobilized in favor of the changes. Despite the predominance of conservative groups in the central administration of the University, the reform initiated by Pimenta was institutionalized. Boson's rectorship was also characterized by the increase of external political pressures, and his compulsory retirement on October 16, 1969, by the Military Junta that governed Brazil, was only one of the repressive events that affected other professors, students and employees of UFMG. Among the UFMG professors punished by the regime was also the former rector Aluisio Pimenta, compulsorily retired on the same day as Boson. Marcello Coelho, linked to researchers in the biological sciences at the University and a professor at the School of Pharmacy, replaced Boson on December 13, 1969, and ended his mandate on December 13, 1973 (Resende & Neves, 1998).



Menezes Dantas<sup>11</sup>, who was a full professor at the School of Engineering and, at the time of the move, also the head of the Mathematics Department of the School of Philosophy.

*Dantas left the Department. He was the head of the Mathematics Department at FAFICH<sup>12</sup>. When it was time to move here, he left, and Edson<sup>13</sup> took over. So it is starting from scratch. You can see the history of the Institute of Mathematics that became a Department. This Institute of Mathematics was formed by the reunion of the Mathematics departments that existed at FAFICH, at Economics, at Engineering, everywhere had its Mathematics department with its faculty. Some of the professors were teaching in two of these places, but the Institute of Mathematics, in 1967, was formed with the agglutination of these departments. Formally, because several people didn't come here. The School of Engineering continued to have mathematics classes there, and so did the Economic Sciences. So, mainly these faculties that were stronger, they continued to have Mathematics classes there. (Interview on 06/10/2017).*

In the first years of the Mathematics Department at ICEX, as in other departments that emerged from the Reform, there was a lot of movement of teachers, who requested transfer to other units. In addition, professors who taught Statistics and Computer Science were initially assigned to the Department of Mathematics. The Department of Computer Science and Statistics, created in 1972 within the ICEX, welcomed these professors<sup>14</sup>.

The first years were, then, characterized, as in all the new departments originated from the 1968 reform, by the extinction of the old professorships, by the transit of professors, by the gradual implementation of a new work regime for professors, the exclusive dedication, and by the great demands for the regulation of activities. It is also worth mentioning that, since the collegiate of the Mathematics course only came into existence in the second semester of 1969, the initial decisions regarding curricula and student requests for this course were also made by the Department. The judgments, approvals and denials were then the responsibility of the Board, chaired by the first head of the Mathematics Department, formerly director of the Central Mathematics Institute, Professor Edson Durão Judice<sup>15</sup>, who remained in the position until 1972.

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<sup>11</sup> Edmundo Menezes Dantas (1904-2001) was born in Riachão do Dantas, Sergipe. He graduated in Civil and Mining Engineering at the Escola de Minas de Ouro Preto in 1928. From 1944 he was professor of Infinitesimal and Vectorial Calculus at the School of Engineering and, since 1950, of Geometry at the School of Philosophy of UMG, future UFMG. He was also a director and professor at Fundação Mineira de Educação e Cultura (Fumec), in Belo Horizonte, from 1969 to 1987. He wrote books for higher education in mathematics, such as Elements of Differential Equations and Elements of Vector Calculus (Faculdade de Filosofia, 1954).

<sup>12</sup> The professor used the acronym that came to designate the Faculty of Philosophy and Human Sciences after the 1968 reform. In 1967, the unit to which Professor Dantas belonged was still called Faculdade de Filosofia, Ciências e Letras.

<sup>13</sup> Suzana referred to Professor Edson Durão Judice, the first head of the Mathematics Department at ICEX.

<sup>14</sup> Later, in 1976, a new restructuring was promoted with the creation of the Department of Statistics at ICEX. The Institute is currently made up of the five departments that have existed since then: Mathematics, Physics, Chemistry, Computer Science, and Statistics.

<sup>15</sup> Edson Durão Judice (1925-2018) was born in Belo Horizonte and graduated in Civil Engineering from the University of Minas Gerais (UMG) in 1948. He studied at Instituto de Matemática Pura e Aplicada in 1953 and

The minutes of the Departmental Chamber<sup>16</sup> meetings are relevant documents for mapping the various directions of the issues involved. Even before the constitution of this body, after the election of its members, the minutes of a general meeting of the professors of the Department, held on 09/01/1969, register the approach of the responsibility for Mathematics at the University, which included, besides the courses of Mathematics, Physics and Chemistry based at the ICEX, the courses of several other units, such as the School of Engineering, the School of Economic Sciences, the School of Architecture, the School of Medicine and the School of Pharmacy. At the same meeting, the project for a graduate course in Mathematics at UFMG was focused on, through the reading of a memorial previously sent to the Coordination for the Improvement of Higher Education Personnel (CAPES), which was unanimously approved by those present.

Graduate studies, faculty training and careers, as well as the new work regime, exclusive dedication, which would be implemented at UFMG starting in 1970, are interrelated aspects recurrently mentioned in the minutes of the meetings of the Mathematics Department Board in the period 1969-1973, precisely that of the rectorship of Professor Marcello de Vasconcellos Coelho. An excerpt from his final report, after enumerating important points of his accomplishments, makes clear the link between the activities of the professors, their work regime and the training via graduate courses.

Another measure requiring definition was the establishment, albeit imperfect, of broad and objective criteria to evaluate the teaching load, necessary not only to characterize the conditions justifying a special work regime, but also to allow the evaluation of the real teaching capacity of the University. In this task, it was possible to create conditions to encourage professors to engage in graduate courses and research activities, and to reaffirm the primacy of the Department in the University (Resende & Neves, 1998, p. 106).

Law 5540/1968, in the chapter dedicated to the teaching staff, established that, for entry and promotions in the career, university degrees would be considered. In addition, there were articles 34 and 35, which prescribed the progressive extension to professors of the regime of exclusive dedication to teaching and research, and gave priority to "the areas of greatest importance to basic and professional education" (Law 5540 of November 28, 1968<sup>17</sup>). Under article 36, the improvement programs for higher education teachers would be established by the universities, "within a national and regional policy defined by the Federal Education Council and promoted through CAPES and the National Research Council" (Law 5540 of November 28, 1968).

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1960. He became Professor of Analytic and Projective Geometry at the School of Engineering (1962) at UMG. He was director of the Central Mathematics Institute and first head of the Mathematics Department of UFMG. He wrote books for the teaching of Analytic Geometry, Linear Algebra, and Differential and Integral Calculus. Available at <http://lattes.cnpq.br/2976484496590401>. Accessed on November 14, 2021.

<sup>16</sup> We used the first two books of these minutes. The first one (UFMG, 1973) covers the period from 08/01/1969 to 06/26/1973 and the second one (UFMG, 1977) covers from 06/26/1973 to 05/06/1977.

<sup>17</sup> Available at <https://www2.camara.leg.br/legin/fed/lei/1960-1969/lei-5540-28-novembro-1968-359201-publicacaooriginal-1-pl.html>. Accessed on Mar. 30, 2021.

## Training, teaching career, post-graduation and exclusive dedication in the early days of the Mathematics Department

The training of mathematics professors at UFMG had been made mandatory for the career by the 1968 reform, but, even before the creation of the Mathematics Department of the ICEX, there is evidence of initiatives to train teachers in the area. In the School of Engineering, for example, the account of Professor Roberto de Maria Nunes Mendes, whom we interviewed, included courses for professors given by professors of the institution who had previously gone to the United States to study. One of them, Eliseu Resend<sup>18</sup>, with a Ph.D. from New York University in 1963, taught Measurement Theory and Partial Differential Equations, and Roberto attended one of these courses.

In the newly created Mathematics Department, in 1969, some professors who until then had worked in the School of Engineering and the School of Philosophy were enrolled as students in graduate programs. The minutes of the Board meetings, from the first year, contain records with these indications. Thus, the first minute, of February 13, attests to the request for leave from Professor Roberto de Maria Nunes Mendes, at the time a Master's student at the Instituto de Matemática Pura e Aplicada (IMPA), in Rio de Janeiro, to pursue a doctorate in the United States. Having received a grant from the then National Research Council (CNPq), Roberto's request for a leave of absence was accepted and he went on to earn his doctorate at the University of California, San Diego, from 1969 to 1973<sup>19</sup>.

The minutes from 1969 and 1970 show requests to continue the leave of Professor José Pedro da Fonseca, formerly a professor at the Philosophy Faculty, for a doctorate at the Massachusetts Institute of Technology (MIT), also in the United States, due to the extension of his scholarship by the Rockefeller Foundation<sup>20</sup>. Also in the minutes of 1970, we verified, through the records of the request for renewal of leave and the sending of activity reports, that professor Waldir Resende Penedo, also previously part of the School of Philosophy, was away from UFMG for a master's degree at ITA - Aeronautics Technological Institute.

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<sup>18</sup> Eliseu Resende (1929- 2011) was born in Oliveira (MG) and graduated in Civil Engineering at the current UFMG in 1954. During the Military Dictatorship, he was director of DNER (National Department of Highways) from 1967 to 1974 and Minister of Transportation from 1979 to 1982. Defeated candidate for governor of Minas Gerais, he was later elected congressman and senator for the Liberal Front Party (PFL). Available at <https://www.fgv.br/cpdoc/acervo/dicionarios/verbete-biografico/eliseu-resende>. Accessed on November 15, 2021.

<sup>19</sup> According to the professor's Lattes resume, available at <http://lattes.cnpq.br/6719952816209548>. Accessed April 14, 2021.

<sup>20</sup> According to Motta (2014), since the 1920s the Rockefeller Foundation funded projects to equip laboratories linked to university institutions in Brazil. In 1970, a report commissioned by Usaid (United States Agency for International Development) identified 128 foreign funding projects for Brazilian education, and most were intended to pay scholars abroad. The main agencies were the OAS (Organization of American States) and the UN (United Nations), through the World Bank and the IDB (Inter-American Development Bank). The Rockefeller Foundation's donations at the time amounted to 227 thousand dollars, while the Ford Foundation's were 16.5 million dollars.

At the very beginning, therefore, the Department had, among its teachers on leave for training, at least two doctoral students in the United States and one master's student in Brazil. There were also professors with doctoral degrees. Professor Edson Durão Judice held the title of Doctor, having been a professor of Analytic and Projective Geometry at the School of Engineering since 1962, after being approved in a competitive examination with defense of a thesis based on studies carried out with a CNPq scholarship at IMPA. The faculty also included Aristides Camargos Barreto (1935-2016), formerly a professor at the School of Engineering, one of the first three PhDs graduated from IMPA<sup>21</sup> in 1964 under the guidance of Maurício Matos Peixoto<sup>22</sup>.

Roberto Mendes, in his interview, talked about studies he had done, still as a professor at the School of Engineering, with Aristides.

*Now, I really learned most was with Aristides. Because when Aristides came back<sup>23</sup> he taught us on Saturday afternoons. He taught Linear Algebra, Metric Spaces, Group Theory. I remember that I was the one who presented Group Theory, a big book published by, in Rio, Fortaleza, I think. It was a big book about group theory. I explained everything there, the whole theory of groups. So, he was the one who encouraged us (Interview on September 20, 2017).*

Aristides Camargos Barreto was a professor at the Central Mathematics Institute, where he taught, in 1967, Differential Geometry and General Topology, as informed by the class diaries of these disciplines. However, he did not join the Mathematics Department at ICEX. Since 1969 he was a visiting professor at the Pontifical Catholic University of Rio de Janeiro (PUC-Rio). The minutes of a Board meeting of April 1970 mention a letter signed by the rector of that institution, which argued in favor of the need for Aristides to remain there during the entire academic year, in order to continue the work he had been developing in the graduate program in Mathematics. According to the minutes, although the occasion was inconvenient for ICEX, the request was granted, but it was recorded that this implied a commitment to return the professor to the Mathematics Department on March 1st, 1971. This record seems to reflect the annoyance and dissatisfaction of the members of the Mathematics Department Board with the granting of the request, considering that the Master of Mathematics project, then in progress at UFMG, needed doctors to be effective, and certainly counted on the participation of Professor Aristides<sup>24</sup>. Aristides did not return to UFMG; he worked at PUC-Rio for 30 years, retiring in 1999.

<sup>21</sup> According to the faculty member's Lattes resume, available at <http://lattes.cnpq.br/2976484496590401>. Last access on 14 Apr. 2021.

<sup>22</sup> Aristides' thesis is entitled "Structural Stability of Differential Equations of the Form  $X = S(X, X)$ ." Available at <https://impa.br/pesquisa/lattes/>. Accessed 08 Apr. 2021.

<sup>23</sup> The professor was referring to Aristides' return to UFMG after completing his doctorate at IMPA.

<sup>24</sup> A year later, in April 1971, another act records the extension of the professor's leave without pay to continue advising master's degree students at PUC-Rio, again at the request of the institution itself, for another year. In 1972, there was another renewal, for another year, of the leave requested by the professor. The minutes of this

The university career demanded the training of the professors of the Mathematics Department, which meant, above all, that they should get a master's degree as soon as possible. Having at least this title was important for career advancement and to have access to better working conditions, besides representing the possibility of initiation in research activities, clearly established by the 1968 reform<sup>25</sup>. A reading of the minutes of the Departmental Board meetings in the period 1969-1977 shows the presence of several requests for leave of absence, reduction of teaching load, or permission to leave the ICEx for short periods. These requests were related to attempts by the professors to get a Master's degree in several areas. From 1969 to 1977, we found records of teachers seeking Master's degrees in Business Administration at UFMG itself or at the João Pinheiro Foundation in Belo Horizonte; Computer Science at PUC-Rio; Statistics at IMPA; Economics at UFMG; Mathematics Teaching at Unicamp. These requests were in some cases granted and in others refused or only partially granted. The professors who wanted to do a Master's in Computer Science or Statistics had their requests approved, but later, with the creation of the Computer Science and Statistics departments at ICEx, they transferred to there.

Efforts by several teachers to prepare for a Master's degree in Mathematics were also evident in requests for funding to go to the Brazilian Mathematics Colloquium or for leave to receive a scholarship for summer courses at IMPA. There were several references from interviewed professors to courses or seminars offered informally at UFMG itself, the purpose of which was to broaden the knowledge of the professors so that they could later follow courses in the Master's program. The minutes of a Departmental Board meeting in 1969 report that an agreement between the National Bank for Economic Development (Funtec)<sup>26</sup> and IMPA was being studied in order to grant scholarships to the staff of the Mathematics Department to obtain a Master's degree from that institution in the coming years<sup>27</sup>.

Another type of record in the minutes of the early years attests to investments made in the scope of the Institute of Exact Sciences for research and graduate studies: the purchase of books and scientific journals, part of which were destined to the Department of Mathematics. In June 1970, the director of the ICEx signed an ordinance creating commissions to deal with matters related to graduate studies in Mathematics, Physics and Chemistry.

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meeting, held on May 5, present the reason for granting the request: the collaboration that this University had been providing to UFMG through its Computer Science Department.

<sup>25</sup> The reform instituted the inseparability between teaching and research, establishing in the first article of the chapter entitled "Higher Education": "Higher education has research, the development of sciences, letters and arts and the training of university-level professionals as its objectives". Available at <https://www2.camara.leg.br/legin/fed/lei/1960-1969/lei-5540-28-novembro-1968-359201-publicacaooriginal-1-pl.html>. Accessed on 14 Apr. 2021.

<sup>26</sup> According to Motta (2014), in May 1964 the Technical and Scientific Development Fund (Funtec) was created, linked to the BNDE. Right from the start, Funtec supported, in academia, Coppe (Coordination of Graduate Programs in Engineering), in Rio de Janeiro. After that, Funtec started financing other research and post-graduation groups. In 1969, it was transformed into the FNDCT (National Fund for Scientific and Technological Development), also controlled and managed by the BNDE.

<sup>27</sup> Some teachers managed, during the period we focused on, to get a Master's license in that institution and finished it there; others started the course at IMPA, but ended up finishing it at the Master's in Mathematics at UFMG itself.



An essential aspect of the university reform was related to the work regime of the professors. Since 1965, law 4881-A had provided for the regime of exclusive dedication (DE) for professors in the federal system, which previously existed only at ITA and the University of São Paulo (USP). The implementation of this regime "was at the heart of the modernization proposals, since it would give teachers effective conditions for research, with reduced teaching load" (Motta, 2014, p. 245) However, this new legislation had little immediate impact, due to the lack of resources of universities at that time. In late 1968, it was established that the DE regime would be regulated in a future decree; the implementation would be gradual and subject to the analysis of the work plan of the interested professor. Only in 1970 were there definitive regulations, with the establishment of four work schedules: 12 hours, 24 hours, 40 hours and 40 hours with DE. It meant a significant readjustment in the professors' salaries, which made the career very attractive for those who could get the exclusive dedication (Motta, 2014).

In the Department of Mathematics, the names of the first ones to be granted the DE regime are recorded in the minutes of the Board meeting of April 24, 1970. Among those professors were some who, later, transferred to other departments, such as Computer Science. This first group included the head of the department, five faculty members who later transferred, and four who remained in Mathematics. Among these was Professor Maria Suzana Balparada de Carvalho, who had joined UFMG in 1969; she was, thus, a recent faculty member, hired from the beginning for the Institute of Exact Sciences. Even before there was a Master's degree in Mathematics at UFMG, according to her account, Suzana was already preparing for this level of graduate studies, having taken isolated courses at UFMG and later at IMPA<sup>28</sup>.

At the federal level, an agency of the Ministry of Education, Comcretide (Coordinating Commission of the Full-Time and Exclusive Dedication Regime), defined the amount destined to the integration of teachers to the full-time regime and each university, through Copertide (Permanent Commission of the Full-Time and Exclusive Dedication Regime), established the areas and teachers to be contemplated with the regime. Initially, only about 20% of teachers were included, which generated disputes and jealousy in the establishment of priorities, and also disenchantment, because some teachers understood that the DE would be offered immediately to all (Motta, 2014).

As the first years went by, teaching positions were granted to the Department of Mathematics, with competitive examinations being held for the levels of teaching auxiliary, assistant and associate professor in 1973, to fill the many teaching demands of several courses. Gradually, the number of full-time professors grew, with incentives for those who were involved, as students or professors, in graduate studies in Mathematics, especially the graduate studies that were to be established in the Department itself. However, it is possible

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<sup>28</sup> In her interview, she said she left the Department in 1971 to study at IMPA in Rio de Janeiro. She then went on to do her Master's studies in England, at the University of Warwick, which she completed in 1973. She was at the same university again, from 1981 to 1983, and completed her Ph.

to notice from the minutes of the Board meetings that not all interested parties were immediately granted the DE regime. In 1974 and 1975, there were still disputes to occupy vacancies in this regime that originated from the withdrawal of its initial occupants. The nominations of the new occupants were supposed to be made in an election by the members of the Board and, in May 1975, two of these members abstained from nominating names and voting, lamenting the University's global policy, which did not provide the same conditions and opportunities to those who wanted to train, making it difficult for some to continue their studies, dedicating themselves to a master's degree.

The work done to propose, to the central administration of the University, a Master's degree project based at the Department of Mathematics led to the approval of this course by the Graduate Council of UFMG, in a session held on October 19, 1971, as stated in a communication from that Council presented at the meeting of the Mathematics Department Board on November 12 of the same year. The minutes of the meeting record that the beginning of the Master's course in Mathematics had been approved, in accordance with a project prepared by the Department of Mathematics.

### **The Master's in Mathematics at UFMG**

When it was approved, in 1971, the Master's in Mathematics had already gone through several stages since the formation of the Department. In fact, the project of this course was mentioned in the first faculty meeting, in early 1969, as we have already mentioned. The interviews of some professors who participated in the first moments of the course allow us to perceive that the faculty training, which had begun at the time when those who taught Mathematics at UFMG were allocated, above all, to the School of Engineering and to the School of Philosophy, through studies developed locally or in other institutions, was an important landmark on the path to the existence of the stricto sensu post-graduation course in Belo Horizonte. Professor Roberto Mendes reported that, when he returned from IMPA after finishing his Master's degree, in March 1969, while he was waiting for the scholarship for his doctorate in the United States, he informally taught the subject Introduction to Analysis to some colleagues in the Mathematics Department. At the same time Professor Edson Durão Judice taught Linear Algebra. Roberto commented that the beginning of the Master's program at UFMG can be situated at this time, right after his return from Rio de Janeiro.

*My presentation was in the beginning of March. Then I came back to Belo Horizonte, and I still taught that whole semester, the first semester of 1969. Then I gave a course on Introduction to Analysis. It was the beginning of the Master's program here. I taught for professors: Alvarenga, Castilho, Suzana, Wellington, Wellington's wife... There was no class diary, it was informal. Edson taught Linear Algebra from Lang's book and I taught Analysis*

from Bartle's book<sup>29</sup>. This is the embryo of graduate school. Even Wellington did it (Interview on 09/20/2017).

Of the names mentioned, Alberto de Alvarenga Cunha, Luís Flávio de Castilho and Maria Suzana Balparda de Carvalho, our interviewee, were faculty members of the Department. Suzana, in her interview, remembered the classes referred to by professor Roberto: *Roberto Mendes was my professor, not in graduation, but he gave classes to us, it was a discipline really, but without any formalization* (Interview on 06/10/2017).

Castilho and Alvarenga were graduates in Engineering at UFMG and probably had not had the opportunity to take, as undergraduates, the subjects mentioned by Roberto. Wellington Celso de Melo (1946-2016)<sup>30</sup> was, at the time, a student of Electrical Engineering at UFMG. Professor Suzana, who graduated from UFMG in 1968, also remembered that time.

*In the beginning of ICEX, there were no graduate courses in Mathematics, but there were some isolated courses taught by professors Roberto Mendes, Pedro Mendes and, from time to time, by a visiting professor. That's how the Master's began to be structured, which was of great importance for the department.* (Interview on 06/10/2017).

In this talk, the name of Professor Pedro Mendes appears, who had a great participation in the implementation of the Master of Mathematics at UFMG and gave us a written testimony. Pedro told us that he finished his BS in Mathematics at UFMG in 1967, having started his studies at the Philosophy Faculty and attended the last year at the Central Mathematics Institute, already on the campus of the University. Later on, he did his Master's at ITA, in São José dos Campos, from 1968-1969. In mid 1969, Pedro moved to Rio de Janeiro to teach at the Mathematics Department of PUC-Rio. While he was an undergraduate student in Mathematics, he had met and befriended Wellington de Melo, who was studying Electrical Engineering at the School of Engineering. In Rio, Pedro met and became Wellington's PhD colleague, who was then advised by Jacob Palis at IMPA. This researcher was also Pedro's advisor. Pedro finished his course at the end of 1972 and, in January 1973, joined the Mathematics Department at UFMG. The professor recounted his participation in the creation of the Master's in Mathematics as follows.

*Wellington was a monitor at the School of Engineering at UFMG and was very good friends with his professors Alvarenga, José Valério, Castilho, etc. I was Prof. Castilho's*

<sup>29</sup> The interviewee was referring to the books *The elements of real analysis* by Robert Gardner Bartle (1927-2003), originally published in 1964 by John Wiley & Sons, New York, and *Linear Algebra* by Serge Lang (1927-2005), first published in 1966 by Addison-Wesley. Available at <https://www.nytimes.com/2003/11/03/us/robert-g-bartle-75-mathematician-and-author.html> and <https://mathshistory.st-andrews.ac.uk/Biographies/Lang/>. Accessed November 16, 2021.

<sup>30</sup> Wellington de Melo did his PhD at IMPA in the period 1970-1972, under the guidance of Jacob Palis, with a grant from CNPq. Also with CNPq's support, he did post-doctoral studies at Berkeley, in the United States, and at Warwick, in England, from 1972 to 1974. He became a researcher in dynamical systems at IMPA and was a full member of the Brazilian Academy of Sciences and supervisor of Arthur Avila, awarded the Fields Medal. Available at <http://w3.impa.br/~demelo/>. Accessed on April 27, 2021.

*student at the Bachelors. In my conversations with Wellington the idea arose to start a Master's course in Mathematics at UFMG, to give an opportunity to improve these teachers, who certainly would be able to do a good Master's in Mathematics. This motivated us to do a project for this course. We organized a program starting with undergraduate courses (Introduction to Analysis, Introduction to Linear Algebra, ...) leading to Master's courses, such as Analysis of Several Variables, General Topology, Differential Geometry, Algebra, etc.*

*We contacted the Director of ICEx, Prof. Francisco de Assis Magalhães Gomes<sup>31</sup>, in the beginning of 1970, to ask for support to our project. We were very well attended. We and colleagues from IMPA organized ourselves and started to offer the initial courses. We came from Rio regularly to teach these courses. At the end of 1972 I finished my PhD at IMPA and decided to move to Belo Horizonte to coordinate the course more closely (Statement sent by email to the authors on 04/09/2021).*

Professor Pedro's words called attention to his and Wellington's involvement in the implementation of the graduate project. Pedro recalled that 1973, the year he joined UFMG as a teacher, marked the return to the Department of professors José Pedro da Fonseca and Roberto de Maria Nunes Mendes, after completing their doctoral studies abroad, which was extremely important for the Master's to actually come into existence.

As in our work the interviews play an important role, we must make a brief consideration in relation to the testimonies. For the narrator, it is difficult to approach "the multiplicity of identities and references that are created in the space between the lived, the remembered, and the narrated" (Silva, 2012, p. 51-52).

The narrative, conditioned by inner and outer determinants, individual and collective, either by the themes it raises or omits, or by the references in which it is mirrored, establishes a new relationship with truth, not by factuality, but by its meaning (Silva, 2012, p. 54).

In this perspective, from the speech of the interviewee, it is necessary to apprehend not only what he or she did, "but what he or she wanted to do, what he or she believed to be doing, and what he or she now thinks he or she did" (Garnica, 2010, p. 37). Like Alberti (2006), we believe it is a mistake to think of the interview as the history. It is, for us, just a source that, like all sources, needs to be interpreted and analyzed. Thus, the accounts become historical sources only when they are problematized.

It is also necessary to ponder on the written documents used. The minutes of the meetings of the Mathematics Department Chamber, the main written material we used, were not produced for future historical research, but to meet the specific needs of the time, namely

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<sup>31</sup> Francisco de Assis Magalhães Gomes (1906-1990) was born in Ouro Preto (MG) and graduated in Civil and Mining Engineering at the School of Mines of that city. In 1938, he was a professor of General and Experimental Physics at that school and of General Physics at the School of Engineering of UMG, future UFMG. He was also professor of Theoretical and Higher Physics at the Philosophy School of UMG, future UFMG. He was one of the organizers and the first director of the Institute of Exact Sciences (ICEx) of UFMG (Leão, 2002).

to record what was discussed and decided in that body in order to comply with the University's rules and to show the transparency of actions and decisions. We verified that these records, in the investigated period, were very careful and detailed, and it is relevant to inform that the consulted minutes were handwritten and written by professors of the Department, members of the Board who voluntarily assumed this task. We believe that there were no employees available to act as secretaries for the meetings, which also seems to be a common situation in the early post-reform days at UFMG. Written documents, like testimonials, are not neutral: they bear the marks of time and authors; certainly, characteristics of some professors, careful and capricious in style and handwriting, are aggregated to the minutes that subsidized our research, even though documents of this kind bear writing restrictions by their very nature. Like any written document, they are not the truth, but what was agreed to be recorded, in this case to fulfill a task required in the university environment.

In the narrative of Professor Pedro Mendes, one can notice the prominence of the role played by IMPA in the creation of the Belo Horizonte Master's Degree. The closeness of the relations between IMPA and the Mathematics Department of UFMG is evident in activities promoted by this Institute, mentioned above, for which professors from the Department requested leave or funding. Furthermore, there were professors who did their master's degree at IMPA before the creation of this course at UFMG, and also those who, even after beginning their graduate studies at UFMG, entered this external master's program with a leave of absence from the Department. The minutes consulted and the testimonies of professors Roberto, Pedro and Suzana show the strong interactions of the Mathematics Department with IMPA, its main external interlocutor for faculty training.

The testimonies of Suzana and Roberto converge with respect to the great participation of Pedro Mendes in the beginning of the Master's program in Mathematics. Roberto reported that he didn't know him and that when he returned from his PhD, in 1973, he found him at the Department, already supervising, in the concluding phase, the Master's researches of professors Alberto Alvarenga Cunha, José Valério da Silva and Luís Flávio de Castilho, the former teachers of the School of Engineering mentioned in Pedro's testimony. Besides them, Pedro mentored Adairto Gonçalves dos Anjos, a professor at the Department since 1970. These professors were exactly the first four students to graduate from the Master's in Mathematics at UFMG<sup>32</sup>.

The minutes of the Departmental Council meetings and the oral or written testimonies of participants of the first moments of graduate studies in Mathematics make it possible to understand the importance of the actions of many professors towards the implementation of the Master's degree at UFMG. For the success of this enterprise, which, at the same time, materialized in the University the basic element of the university reform represented by

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<sup>32</sup> Information verified on the site of the Graduate Program in Mathematics at UFMG: Alvarenga, Valério and Adairto defended their works in 1974 and Castilho did so in 1975. Available at <http://www.mat.ufmg.br/posgrad/dissertacoes-de-mestrado/>. Accessed on 05 May 2021.



graduate studies and research, and meant a real opportunity for teachers' training, we evaluate that there were some actions before and others immediately after the approval of the course. Thus, we noticed the relevance of the search for training by teachers and of the activities to prepare these teachers for graduate studies in the moments before and in the early days of the Mathematics Department. It was also essential the effort to teach subjects and guide research in the first years of effective operation of the graduate course. Having started at UFMG in 1972, by 1977, the final year covered by our research, the Master's Degree already had 13 approved dissertations, all of them produced and supervised by professors of the Department. Besides the first four masters mentioned above, three of whom were professors before the existence of the Institute of Exact Sciences, nine other younger professors, who had joined the UFMG staff after the university reform, had obtained the title. Of the 13 dissertations, nine were supervised by Professor Pedro Mendes, two by Professor Roberto Mendes, and two by Professor Mu-Chou-Liu, hired in 1976. In the following decade, most of the masters graduates from UFMG continued to be faculty members from the Department. As recalled by Professor Suzana, many of the younger professors were recent graduates, and the Master's program, in the beginning, was almost directed to them. In this way, the graduate course implemented in 1972 allowed to train, above all, the professors from UFMG itself. For this result to be achieved, the internal policies of the Department were primordial. In fact, the minutes of the Board meetings document that incentives were instituted for professors to pursue a Master's degree in Mathematics, which are explicit in the rules established in 1974 for granting leaves of absence or reducing the teaching load. From that moment on, the granting or not of leave was conditioned to the availability of professors to fulfill the numerous teaching responsibilities of the Department, establishing priority for those interested in graduate studies in Mathematics, especially at the doctoral level. Except in exceptional cases, there would be no leave to pursue a Master's degree outside the Department. Requests for teaching load reduction or leave of absence would be examined in light of the faculty members' performance as graduate students in Mathematics, and reviewed by means of their activity reports. The completion of the master's degree in Mathematics by the faculty members was also a decisive element in the evaluation of requests for exclusive dedication, when there were no vacancies for all the faculty members in this regime. A secret ballot was even instituted by the members of the Board to judge the requests. Any attempts by faculty members to obtain leave of absence or load reduction with the justification of pursuing graduate studies in other areas were discouraged by the guidelines and measures adopted by the Mathematics Department Board.

## **To conclude**

Soon after the university reform, structuring the departments meant modernizing the universities, with the creation of conditions to implement and develop graduate studies. For Marcello Coelho, former dean of UFMG (1969-1973), the post-graduation was only possible because departments were formed, and the post-graduation was "the formal system for the preparation of high-level teachers for the country" (Resende & Neves, 1998, p. 120).

The close link between the structuring of ICEX's Mathematics Department and the creation and flourishing of the Master's in Mathematics of UFMG are attested in the minute books of the Departmental Chamber meetings. These documents are not the mirror of the "truth", but their reading, together with the teachers' accounts, allowed us to understand the relations between the composition, the training and the work regime of the faculty and their engagement in graduate studies in Mathematics.

In 1977, the Department had renewed more than half of its original faculty, the Master's Degree had 13 defended dissertations, and some graduates had obtained licenses and scholarships for doctoral studies abroad. The Master's Program had a great impact on the training of the professors, contemplating both those from before 1969 and the later entrants with the opportunity for improvement at UFMG itself.

We realize that the Master of Mathematics was the result of many efforts and, strongly marked by an external institution, IMPA, it achieved success, largely due to the stimulus policies adopted by the Department's directors in its first years. At the same time, other types of faculty training were discouraged. The internal policies and the investments in mathematics training would have repercussions on other fronts of the Department's activities, in particular on the actions linked to the training of teachers in the undergraduate course. This is a theme we intend to explore in future research.

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