

BAHIANA SCHOOL OF MEDICINE AND PUBLIC HEALTH: POST-GRADUATION IN THE AREA OF HEALTH

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In the present Brazilian university system, studies designated “post-graduation” have been defined and regulated by the famous report of the Federal Council of Education, Number 977/65, related by Councilor Newton Sucupira. The implementation of these courses on a national scale has resulted in the formation of a rapidly expanding network over the recent decades, providing a notable increase in, and significant diversification of the services provided to the Brazilian population by the higher education system in our country.

It is therefore expedient to offer more profound comments about the beneficial consequences of the implementation of this network. Among the different regions of the vast Brazilian territory, these consequences have been more patent as the regional economy has shown to be more dynamic and industrialization has advanced more rapidly. In these regions, the population is usually shown to be more receptive to innovations and diversification of the economy, and even puts pressure on scientific research and technological agencies to intensify their activities. The post-graduation courses have been firm supporters of the improvement in quality of life of the populations benefited by them.

The conception of the Brazilian Post-Graduation System was based on a similar, long-standing system in the United States of America, which in turn took great advantage of the experience previously in existence in Germany.

Brazilian university tradition, from its roots at the beginning of the 19th Century, was marked by the objective of educating professionals with a higher level of education. That is, the first higher education schools created in Brazil were for the purpose of preparing human resources in the area of health and were implemented in Bahia and Rio de Janeiro, throughout the year 1808. The creation of those schools only occurred after the regent Prince D. João and his entire Court moved from Portugal to Brazil, in the face of the threat of Portugal being invaded by Napoleon Bonaparte's troops. The transfer of the Portuguese Court to Brazil notably accelerated the rhythm of progress in the old colony. Some years after 1808, the Schools of Law were also created in São Paulo and Olinda. It is worth remembering that since the beginning of the times of Brazil-Colony, between the 16th and 17th centuries, the authorities of Bahia had sent appeals to the Portuguese Metropolis to admit the validity and equivalence of the diplomas granted by the College of the Jesuits of Bahia, to those issued by the Portuguese Universities. These requests for equivalence were invariably denied, or "shelved" by the authorities of the Portuguese Metropolis. They understood that the higher education of Brazilians should be concentrated in the Universities of the Metropolis itself.

The first Schools of higher education to operate in Brazil, therefore, had the exclusive purpose of educating professionals necessary for providing services to the rapidly growing population. These schools came into being and functioned as "isolated" schools that were "complete in themselves", since the scope of each of them comprised the basic or pre-professional disciplines, and the disciplines for professionalization, and had the task of teaching the practices inherent to the profession the students intended to follow. It was recognized that the number of professionals with a higher level of education, imported from the countries of Europe to the Colony of Brazil, was insufficient, which made it urgent to attribute priority to the education of human resources in larger numbers.

After the creation of the first higher education schools, and from then on for over a century, the broad network that was being created in the country maintained the priority observed since its origin: that is to say, the education of human resources. With very few exceptions, only much later on – almost in the middle of the 20th Century, care was taken to add to the schools of higher education, especially when they were organized into Universities, the functions of educating researchers, conducting technico-scientific researches and providing specialized services to the communities that maintained them.

It was therefore, at a very late stage that Brazil awakened to the need for preparing and offering conditions of work to those who had a vocation for scientific and

technological research. In the distant past, almost the total number of researches conducted in Brazil had resulted from the work of foreign researchers, or Brazilians educated outside of our country. The scant research conducted among us until the recent past, was limited to institutions situated in a few geographical regions of the country. In addition, only the fields of health, cattle raising, and exploitation of the riches in our sub-soil had been covered.

This picture gradually began changing, when Brazil showed signs, on a national scale, of placing value on scientific and technological research, by instituting the programs maintained with resources from the Government budget, in the recently-created National Research Council – Conselho Nacional de Pesquisas (CNPq) –, initially linked to the Presidency of the Republic, and Personnel Improvement Coordination of Higher Education – Coordenação de Aperfeiçoamento do Pessoal de Ensino Superior (CAPES) –, also recently created and connected to the Ministry of Education. It was the early 1950s, soon after the end of the Second World War. In parallel, the foundations for the support of scientific research began to be created in various units of the Federation, contemplated with significant resources in state budgets. Later, in the 1980s, the Federal Government created the Ministry of Science and Technology, the designation of which, for just reasons, was later changed to the Ministry of Science, Technology and Innovation, and the decisions involving highest level in public administration.

As is generally known, the Brazil system of Higher education comprises undergraduate and post-graduation courses. The latter comprises “*stricto sensu*” courses, subdivided into “*master’s*” and “*doctoral*” courses, in addition to specialization. The meaning of these various modalities of courses has been widely divulged during the more recent decades and the respective definitions have become widely known. Of all of these courses, it behooves me to comment more extensively, only on the characteristics of the “*stricto sensu*” courses, and the consequences of their implementation.

Long before the approval of the report by Councilor Newton Sucupira, the Faculties of Medicine in our country granted titles of Doctor to ex-student who, having concluded the under-graduate course, submitted a thesis to the Faculty as a requisite for authorization to the practice on profession. By this means, another example of the tradition of European countries, particularly of France, was reproduced, in accordance with the frequent practice among us at that time. Each one of these theses was examined by a commission of professors of the same School. Almost the total number of these theses were based on works of great simplicity. The bibliography was very poor. The experimental contribution, when there was one, had equally little substance. In these theses, problems of a philosophical nature were frequently discussed,

the doctrine focusing on positivism greatly in vogue at the time. The discussion of these theses by the professors, also involved questions with reference to the language used by the candidates. The presentation of the theses and their approval as a demand for practicing the profession, ceased at the end of the decade of the 1920s.

During a period that lasted a few years, a reduced number of doctors, candidates for docent careers presented theses for obtaining the title of teaching doctor. In these cases, it was not a matter of taking doctoral courses. The thesis presented for obtaining the title was argued, and if approved by the board consisting of three or five professors, would then appear in the candidate's "curriculum vitae" as one of the most important titles for the professorship.

Even more rarely, and with great repercussion on the cultural life of the country, initiatives were verified during the same period of a few professors who were the head of very active and productive university services, in which they offered doctoral "courses", with the duration of one or two years, concluding with the presentation of the thesis. These "doctorates" had great prestige among the titles of those who intended to follow the professorship. After the year 1965, the programs of this nature had to be adapted to the rules emanating from the Newton Sucupira report.

Around the year 1911, Brazilian legislation with reference to the academic personnel of higher education, in this case subject to German influence, instituted the "privat dozent" as one of the requisites for becoming a full professor. Obtainment of the title of "privat dozent" involved being approved in a contest of titles and tests including grades in written tests, defense of a thesis, didactic capacity, in addition to practical tests, depending on the nature of the discipline. Writing the thesis to obtain the title of "privat dozent", in many cases, revealed the candidate's capacity for preparation of a scientific work of broader scope, comparable to that demanded in theses to obtain the title of full professor. In addition to access to the competition for professorship, the title of associate professor provided the students with access to taking a "parallel course", in equal conditions to that lectured by the full professor, within the curriculum that led to obtaining the diploma. This possibility, although foreseen in law, has only rarely been requested and authorized.

After the end of World War II, the influence of French higher education on the counterparts in Brazil were largely replaced by the influence of North American tradition. It was then that "medical residence" programs were implemented among us. These were open for inscription by recently-graduated professionals who, in a period of between one to five years, dedicated themselves to specialization in hospital services led by doctors with a high level of performance and respectable scientific baggage, frequently linked to university environments. Although graduation from a medical

course is an essential condition for candidates' access to these programs, medical residencies figure among the specialization programs, and they are not considered post-graduation courses ("stricto sensu"), because they lack the additional demands that give them the academic format of these programs.

At the beginning of the decade of the 1960s a growing confusion has been created in the Brazilian university system, about what should or should not be defined as a "post-graduation" course. The notable expansion of scientific knowledge in the most diverse branches of knowledge, known in a large number of countries, would overload the undergraduate curricula of the higher education courses to an extreme extent. Simultaneously, there was a growing number of specialized fields in the different branches of science and in the professional activities linked to them. The hypothesis of an exaggerated increase in the duration of undergraduate courses, in order to accommodate all the up-to-date material to be offered in the respective curricula, was clearly inconvenient. According to the example of what had been happening in other countries, the Federal Council of Education understood that a category of post-graduation courses should be instituted, defined and regulated on a national scale. It was left to Counselor Newton Sucupira create the basis for the implementation of a vigorous network of post-graduate education that came into existence from then on.

While the title of "doctor" raised the historical review presented above, the academic title of "master", also proposed in the Sucupira report, was soon accepted, almost without restrictions, although it was new in the nomenclature of Brazilian higher education.

There was no delay in the consequences of the implementation of master's and doctoral courses, on the broad cultural scenario of Brazil. On the one hand, they served to deep in the preparation of recently graduated students, by the expansion of knowledge and broadening experience in the practices pertinent to the chosen profession. Equally, these courses have served to educate future full professors of the rapidly growing network of Faculties. Furthermore, they have let the development of skills necessary for the diversified practices inherent to the large variety of specializations in the different professions. And lastly, perhaps the most precious of the contributions of the doctoral course has been the preparation of students who aspire to become researchers. Under the conditions in our country, the latter was and is the most innovative of the functions of post-graduation courses. The education of future researchers, although it may be initiated in the Master's course, or even during under-graduate studies, will receive its greatest emphasis degree during the doctoral courses.

Before the implementation of post-graduation courses in Brazilian territories, the only option for further studies in the different branches of pure or applied science,

was to go abroad. The rapid demographic expansion of Brazil, allied to the elevation of income levels and the educational indexes of our population, were factors that vigorously contributed to the large demand for the different modalities of post-graduation courses.

The students who progress from the undergraduate to the graduate courses, feels that they have many more resources on which to concentrate studies, depending on their personal projects for the profession. The master's and doctoral courses are mutually independent, in relation to one another. Therefore, the master's courses may or may not be followed by access to the doctoral course. Reciprocally, the candidate for the title of doctor may enroll in this course, whether or not he/she had fulfilled the curriculum of the master's course.

In the curriculum of post-graduation courses ("stricto sensu"), frequent seminars and debates amongst professors and students should be organized. In these, the students' formulation of reasoning about the subjects under study will deserve to receive guidance from the professors, although the student should not feel strictly limited to the information transmitted by the professors in the classroom. The modern resources of information technology offer the master's and doctoral students broad opportunity for going more deeply into reading about the subjects pertinent to the curriculum. The infrastructure of the institutions in which the master's and doctoral courses function should include laboratories for the purpose of practical teaching of the disciplines. The baggage of knowledge and reasoning capacity of the students must be examined by the faculty at the appropriate times. The matured experience with respect to the master's and doctoral programs has demonstrated the enormous importance of the figure of the "course tutor" professor of post-graduate students. This task is generally attributed to more experienced professors in dealing with the discipline in question, and especially, with scientific research in the same branch of knowledge, the course tutor has been revealed as a figure of the greatest value in the entire post-graduation process in our medium.

For doctoral candidates, the preparation of a thesis that includes original ideas is demanded. For the master's candidate, in turn, it is sufficient to make use of the critical appraisals contained in the literature, both in the work pertinent to the disciplines of the curriculum and in the dissertation he/she is obliged to prepare before the end of the course, without originality necessarily being demanded from the student in the formulation of the ideas worked on. Thus, in addition to becoming a better professional, the master's student who has plans to reach doctoral level, will gain experience and prepare himself/herself to become another of the researchers that Brazil so badly needs, and that the Brazilian university took too long to begin to prepare, occupied as

it was with training of its students to practice as good professionals. For a long time, the teaching of sciences in elementary and middle schools in our country, predominantly consisted of the transmission of the maximum amount of information from the teacher to the student, in expository lessons, accompanied by reading about the same subjects, limited to didactic books. This methodology of teaching sciences has been replaced by the acquisition of knowledge by means of modern mass communication techniques, followed by criticism and debate between students and professors, about the information collected. Thus, one stimulates the student's reasoning capacity, tests his/her creative capacity and prepares the student, right from childhood, to generate his/her own ideas.

To obtain an academic post-graduation degree, there is necessary to have some teaching experience, which consists in having the responsibility of teaching one of the disciplines of the curriculum to a group of under-graduate students, within the rules of the courses.

The master's degree, as has been analyzed in the present text, characteristically leads to an academic title. The increase in demand for students with post-graduate degree led the acceptance of "professional master's degrees" also evaluated by CAPES (Personnel Improvement Coordination of Higher Education) in accordance with strict criteria. In these courses, total priority is attributed to going more deeply into the specialities of the profession. They differ from the academic master's degrees by the absence of the requisite of the teaching experience, and by less emphasis on the initiation of abilities of a researcher.

Usually, the curricula of master's and doctoral courses have included learning one or more foreign languages, which allowed access to other cultures, beyond our own. The Bahiana School of Medicine, showing itself to be up to date with regard to the recommendations of modern didactics, began to offer master's courses "with a solid technico-scientific education and capacity for interdisciplinary action in various fields of research, development and innovation in technology in the area of health". To these professional master's courses, approved by CAPES, not only the medical undergraduates have access, but also those who complete the undergraduate curriculum in other health professions. In addition, the School created the Post-Graduation program ("strictu sensu"), with the professional master's course in Dentistry – areas of concentration in Stomatology, Periodontics, Implant Dentistry and Clinical Dentistry.

Another demonstration of the vigorous scientific activity of the Bahiana School of Medicine consists of the launching, on today's date, of no less than seven periodicals in the area of Health, namely: *Brazilian Journal of Medicine and Human Health*, *Revista Pesquisa em Fisioterapia*, *Revista Bahiana de Odontologia*, *Revista Bahiana de*

Terapia Ocupacional, Revista de Enfermagem Contemporânea, Revista de Biomedicina em Foco and *Revista de Psicologia, Saúde e Diversidade*. To the leaders of the Bahian School of Medicine with those who are directly responsible for the brilliant set of publications being launched today, I would like to congratulate for the greatest success of this notable effort that honors all of us, Bahians.

The education of researchers, one of the main objectives of the doctoral course, has become a most important link in the relationship between economic activity and academic work. The great success of the network of doctoral courses has led to entities financing research programs to admit the creation of the category “Post-doctors”, consisting of fellowship for those approved in the doctoral course. This category of personnel, who have been accepted for a long time in other countries, is being promoted in Brazil on a growing scale, and has deserved financing by the different public and private agencies.

In Brazil, the post-graduation courses have been strictly evaluated by the CAPES linked to the Ministry of Education. This entity created a system evaluation of courses under its jurisdiction. The value of financial support attributed to the post-graduation courses by public entities, largely depends on this evaluation.

Among the factors that have most contributed to the success of the post-graduation programs, especially those of the doctoral course, of important interest, is the Federal Government’s decision to grant the full time positions to selected members of the faculty of public institutions. In fact, the scientific research conducted by faculty members in full time position has usually been more productive, than that conducted by personnel working on a part-time basis.

The work of the doctoral courses, above all by the emphasis attributed to scientific and technological research in these courses, has resulted in greater approximation between the higher education system and the economic community at regional and national levels. For this reason, the sources of public and private financing for scientific and technological researchers have grown.

The major portion of financial support for scientific and technological research in Brazil continues to originate from the public sector. Gradually, however, a growing number of private companies have increased the proportion in financial support for scientific and technological research, particularly in the regions of our vast territory, where industrialization has advanced most.

The expansion of the doctoral programs has resulted in a large increase in national scientific production, expressed by the rapid increase in the number of articles published in national and international journals accredited by the specialized agencies. This increase in scientific production did not immediately correspond to the

equivalent expansion in the number of patents applied for or granted, for technologically-based products and processes of Brazilian origin. In other words: Brazilian scientific production increased, above all, thanks the University activity, and was not accompanied on a comparable scale by the creation of innovations, which more frequently arise from technologically-based companies, as compared with universities. The large internal Brazilian market for manufactured goods assures good return thanks, to the transfer of technologies imported from other countries, and known on the international market. Thus, the companies involving in our country do not concern themselves, as a priority, generating products for exportation arising from technological innovations, unknown up to now on the international market. In more recent years, Brazil awoke to the need for stimulating innovations that would allow the generation of processes and products not yet known to consumers, in order to be better able to face up to competition with similar products originated in other countries. Moreover, it was perceived that the capacity for innovation of our researchers should start by improving the teaching of sciences, right from the time of elementary school, thanks to the opportunities offered to student to criticize and debate the information transmitted to them, thus generating the stimulation of original ideas.

To the professors and students for the master's and doctoral degrees of the Bahiana School of Medicine, I offer my wishes for complete success in the yearly journey that is beginning. The faculty members and their students know the importance the post-graduation network represents for improving the cultural panorama of the country, giving it brilliance and prestige before the entire brazilian population. Professors and students dedicated to different university careers have been worthy of the confidence bahians and brazilian place in their ability for studing , in their disposition to work, and in their spirit of battling in favor of achieving their ideals.