

REVERSAL OF THE GENDER GAP IN BRAZILIAN EDUCATION IN THE 20TH CENTURY

KAIZÔ IWAKAMI BELTRÃO

Professor of the Masters course in Population Studies and Social Research at the National School of Statistical Sciences of the Brazilian Institute of Geography and Statistics
kaizo@ibge.gov.br

JOSÉ EUSTÁQUIO DINIZ ALVES

Full professor and coordinator of post-graduate studies at the National School of Statistical Sciences of the Brazilian Institute of Geography and Statistics
jedalves@ibge.gov.br

ABSTRACT

REVERTING THE GENDER GAP IN THE BRAZILIAN EDUCATION SYSTEM IN THE 20TH CENTURY. The reduction of the gender gap and the improvement in female access to education were explicit objectives of the IV Conference on Women (1995), of the World Education Forum (2000) and of the Millennium Summit (2000). All International Conferences promoted by the United Nations Organization (UN) recommend actions to eradicate discrimination against women in all fields of activity, especially education. The gender gap and the education deficit among women have always been part of the Brazilian reality. However, women have been able to eliminate and reverse this gap throughout the 20th century. The main purpose of this article is to analyze when the reversion of the gender gap in Brazilian education occurred. In order to do so, we will present information obtained from demographic censuses from 1960 to 2000, based on schooling levels disaggregated by gender and birth cohorts. This methodology will allow us to track the evolution of the gender gap in birth cohorts after 1890 until 1995.

GENDER – WOMEN – FORMAL EDUCATION – SEX DIFFERENCES

The gender gap in education occurs when there are systematic differences in schooling levels between men and women. It is a useful measure for providing evidence of the inequalities that exist between the sexes in terms of access to school. For most of the 20th century the gender gap in Brazilian education occurred because men's literacy rates and other levels of education were higher than those of women. According to approaches to gender, differences in educational levels are not the result of any biological characteristics but come from the historical and structural conditions that have shaped each society. In almost all countries in the world there were always large barriers preventing women from having access to school. Some countries have managed to break down these barriers, but in others there is still a long battle ahead.

Reduction in the gender gap and greater access of women to education were explicit objectives of the IV Woman's Conference (1995), the World Education Forum (2000) and the Millennium Goals (2000). All the international conferences promoted by the United Nations (UN) over the last ten years have started from the principle that to achieve a fairer and more prosperous world it is necessary to eliminate discrimination against females in all fields of activity, especially in education. By doing so, women will have greater status and autonomy, or in other words, greater empowerment.

The gender gap and a shortfall in education for women were part of the Brazilian reality for almost 450 years. According to Alves (2003), reversal of the gender gap in education was the biggest conquest of Brazilian women in the last century. This female triumph, however, has still not been sufficient to reverse the gender gap in the labor market, in access to income and property, in parliamentary representation, etc. Victory in the educational field has still not met with the same success in other spheres of activity, but undoubtedly the educational progress of Brazilian women may serve as an example for the leaders of other countries in the world who want to eliminate the gender gap, in line with the objectives established in various multilateral conferences organized by the UN.

The objective of this article is to describe when the gender gap was reversed in education in Brazil and show that universal public policies, as well as cultural and behavioral changes were fundamental in this process. Initially, we shall present a brief history of education in Brazil, followed by a panorama of the evolution of the feminist movement in the country. The objective is to check the relationship that exists between the history of women and social history, since the two are not identical - they have a different dynamic and relations

between them are complex. The subsequent sections give data from the demographic censuses taken between 1960 and 2000. A comparison of the average number of years study for different cohorts and the differences between the sexes allows us to define the moment when there was a reversal of the gender gap for each birth cohort. This is reinforced by examining the proportions of young people who complete the different levels of elementary school and of individuals who complete high school and university by age group and sex. In the conclusion the data are analyzed.

A BRIEF HISTORY OF FEMALE EDUCATION IN BRAZIL

The Brazilian colonial economy, which was founded on large rural properties and slave labor, paid little attention to formal education for men and none whatsoever for women. Isolation, social stratification and patriarchal family relations¹ favored a power structure based on the limitless authority of landowners. According to Ribeiro (2000), the Iberian cultural tradition, transposed from Portugal to its Brazilian colony, considered women as inferior beings who had no need to learn to read and write. The educational work of the Society of Jesus significantly contributed to strengthening male predominance; its priests had a liking for dogmatic forms of thinking and preached the maximum authority of Church and State.

With the arrival of the Portuguese royal family² in Brazil and Independence in 1822, Brazilian society began to have a more complex structure. International immigration and economic diversification increased the demand for education, which started being seen as an instrument for rising socially through the intermediary social strata. In this new context, the country's leaders voiced their concern with female education for the very first time. The Empire's first legislators established that primary school education should be the responsibility of the State and open to girls, whose classes would be taken by female teachers. But due to a lack of qualified female teachers and unable to arouse much interest in the parents, education did not reach a significant percentage of female students (Unicef, 1982).

¹ According to Prado (1982, p. 51), the term 'family' "originates from the Latin *famulus*, meaning a chief or lord's group of serfs and dependents. Among the so-called dependents are the wife and children. So, the Greco-Roman family comprised a patriarch and his 'familiar': wife, children, free serfs and slaves".

² With the arrival of the Portuguese Royal Family in Brazil in 1808 there was an "about-turn in relations between the metropolis and its colony" (Fausto, 1995, p. 121).

In the first half of the 19th century the first institutions aimed at educating women began to appear, although in a dual teaching picture, with clear gender specializations. Generally speaking, primary education, with its strong moral and social content aimed at strengthening the role of the woman as wife and mother, was for females. Female high school education was largely restricted to teacher training, in other words preparing female teachers for the primary school courses. Women were still excluded from higher levels of education during the 19th century. Emphasis was still on the needle, not the pen. The first school was set up in Niterói, in 1835, followed by another in Bahia, in 1836. Until the final years of the Empire normal schools were few in number and almost insignificant in terms of student enrollment (Hahner, 1981).

If females found it difficult to have access to elementary education the situation was more dramatic when it came to higher education, which was eminently male dominated. Women were excluded from the first courses in Medicine (1808), Engineering (1810) and Law that sprang up in the country. The imperial decree that gave women the right to enroll in a university course dates from 1881. However, it was difficult to overcome the previous barrier, because high school studies were essentially male-oriented, in addition to being dear, and normal courses did not qualify women for entry to universities. The first woman to obtain the title of ‘doctor’ [medical] in Brazil was Rita Lobato Velho Lopes, in 1887. It is important to note that during the 19th century and the first half of the 20th century female exclusion from high school courses made it unfeasible for women to enter university. So, duality and gender segmentation have been present in the Brazilian educational system since the beginning, with women having lower literacy rates and restricted access to higher levels of education (Romanelli, 2001).

The Brazilian Constitution of 1891 sanctioned the decentralization of education into a dualist scheme: the federal government was responsible for creating and controlling higher and secondary school educational institutions and the States were responsible for setting up schools and monitoring and controlling elementary education, as well as high school level professional education, which included normal schools for girls and technical schools for boys. While the educational system expanded quantitatively at this time there was little by way of qualitative change. The literacy rate of the Brazilian population grew during the Old Republic (1889-1930), despite continued high levels of illiteracy. Educational exclusion was obviously always greater for black women (Beltrão, Novellino, 2002).

The enrolment rates of Brazilian women in secondary and higher education increased at the beginning of the 20th century, but by much less so than those of men. Table 1 shows that between 1907 and 1912 in the Federal District female presence in high school courses corresponded to less than a quarter of all students and in university courses it did not reach 1.5%. It is worth remembering that Rio de Janeiro had one of the best rates of education in the country.

TABLE 1
NUMBER OF PEOPLE ENROLLED IN HIGH SCHOOLS AND UNIVERSITIES
FEDERAL DISTRICT- 1907-1912

Year	High school level			University level		
	Men	Women	% Women	Men	Women	% Women
1907	3,721	1,221	24.7	2,455	32	1.3
1909	4,596	1,460	24.1	3,323	39	1.2
1912	7,165	2,145	23.0	3,630	53	1.4

Source: Statistics of the 20th century, IBGE, 2003

The reasons why the level of Brazilian investment in education was low had their origins in the primary-products export-driven economic model that was based on a slavocracy. While the population remained in the countryside, with its archaic means of production, schools exercised no important role in qualifying human resources, being merely an agent for educating people in how to enjoy their leisure time or for preparing for self-employed professional careers, in the case of men, or for being primary school teachers or housewives, in the case of women.

By redirecting Brazilian development towards the domestic market and to the urban-industrial sector, the Revolution of 1930 led to the first public policies for the masses, especially for those who lived in urban areas. The new demands made by industrialization and urban services had an influence on the content and expansion of education. But, as the expansion of capitalism was not homogenous all over Brazil most of the expansion in demand for schools occurred in regions where capitalist relations were more advanced.

During the period of the so-called Populist Pact (1945-1964), despite popular pressure for the democratization of education, the “aristocratic” character of schools was maintained with the agreement of the ruling elite. It should not be wondered at, therefore, that the expansion of school cover occurred in an improvised and insufficient way. For the purposes of our study it is important to point out that only in 1961, with the Guidelines and Bases of Brazilian Education Law (*LDB*), was the equivalence of all high school courses guaranteed,

thus opening up the possibility for women who were doing teacher training to sit the university entrance exams. So it was from the 1960s that Brazilian women had a bigger chance of going to university and it was in the 1970s that the reversal of the gender gap in university education began.

As industrialization and urbanization in the country began to intensify, the educational system grew both horizontally and vertically. The military governments that were installed in the country after 1964, and which drew their inspiration from the North American model, took measures to meet the growing demand for places and professional qualifications, which was also in accordance with their international commitments. The alliance between the military and techno-bureaucracy made it possible for large growth in the number of post-graduate courses. The objectives were to produce competent teachers for the universities themselves, stimulate development of scientific research and ensure the formation of intellectuals who were qualified to respond to the needs of national development (Cunha, 2000).

The expansion of education in Brazil continued with the process of redemocratization in the country, with installation of the so-called “New Republic” in 1985. In the 1990s public policies were developed that were aimed at maintaining children in school (School Scholarship scheme) and making an effort at providing universal basic education. In higher education there was major growth in private universities and the number of students enrolled in them greatly exceeded the number in public universities. This general expansion of places in Brazilian education particularly favored women. In the second half of the 20th century women managed to reverse the gender gap in education at all levels. They knew how to take advantage of the opportunities created by the social transformations that were occurring in the country.

But above all the reversal in the gender gap was a triumph that resulted from an historical effort by the women’s movement as part of a more general struggle for equal rights between the sexes that involved countless social players. This did not only happen in Brazil, but was part of a worldwide change whereby the role of women in society was being redefined and the patriarchy was becoming weaker (Therborn, 2004).

A BRIEF HISTORY OF THE FEMINIST MOVEMENT IN BRAZIL

The Brazilian feminist movement, even though it was small in terms of social visibility, contributed in a fundamental way to reversing the gender gap. To understand the reversal of gender inequalities in education, in addition to knowing the general history of the country it is also necessary to understand how women broke away from the cultural tradition that reserved for them a priority role in the private arena (home and family), while the public arena was monopolized by the men.

During most of Brazil's history there was a sexual division of labor that, generally speaking, imposed domestic and reproduction activities (private) on women and extra-domestic and production activities (public) on men. The prevalence of high morbidity and mortality rates, especially the high indices of maternal and infantile mortality, reduced the life expectancy of the population. As a consequence, society was organized in the sense of maintaining high fertility rates. On average, women had a large number of pregnancies during their reproductive period, which made them "prisoners" to the activities of bringing up children and domestic chores. In this arrangement, women had less access to schools than men, because in addition to the fact that the offer of places was small, a sexist and patriarchal culture assigned the role of providers to men, who had the best opportunities for education and remunerated work (Alves, 1994).

Despite it not being a very close connection there is a relationship between the history of women's struggles and the economic and social change processes that occurred in Brazil. Obviously, the past history of the women's movement cannot be studied in a vacuum. Their triumphs were partial and progressive. Small victories began piling up over time and the difficulties did not prevent there being a gradual, albeit not linear evolution. During the colonial period Brazilian women lived under adverse conditions, the victims of stereotyping by the Catholic Church. Black women (with the exception of those who had been freed) were slaves and therefore did not enjoy the rights of citizenship. The rest, even though they enjoyed freedom and abstract rights, lived in relative isolation and were second class citizens because they could not vote and suffered severe restrictions as far as access to school and extra-domestic work were concerned.

As Teles (1993) showed, in this overall picture of subordination the example of a 'new woman' in the person of Nísia Floresta (1810-1875) stands out. She was a pioneer in the

struggle for teaching girls and young women to read. She founded an innovative school in Rio de Janeiro that represents a milestone in the history of female education in Brazil. In the second half of the 19th century the female press arrived on the scene and various newspapers were directed by women: *Jornal das Senhoras* (1852) [Ladies Journal], *O Bello Sexo* (1862) [The Fair Sex], *O Sexo Feminino* (1873) [The Female Sex], *O Domingo* [Sunday] and *Jornal das Damas* [Dames Journal] (1874), *Myosotis* (1875), *Echo das Damas* [Dames Echo] (1879), and others.

Despite having a short life and being relatively isolated they all emphasized the importance of female education, even if initially it was an education based on family values and glorification of the functions of wife and mother. Despite circulation and content limitations little by little the female press firmed up on the idea that education was fundamental to the country's progress and to the emancipation of women.

In parallel with the growth in the female press and also in the second half of the 19th century, Brazilian woman played an important part in the main social movements of the period: the struggle against slavery and for a Republic. Even in their role as supporting players in these movements their actions cannot be ignored. At the start of the 20th century, despite the advances that occurred as a result of the institution of free labor and the Republic, Brazilian women were unable to achieve the fundamental changes that were capable of reversing the scenario of subordination that had existed since the country had been discovered (Pena, 1981). The social and political environment was not favorable to a significant improvement in the country's educational picture.

Only after the 1930 Revolution would the situation begin to change substantially. On a political level, there is no doubt that the right to vote that had been obtained by a Decree law signed by President Getúlio Vargas on 24 February 1932 contributed towards recuperating a part of female citizenship. The first election occurred in 1934, when only one solitary congresswoman was elected to the Federal Chamber, Carlota Pereira de Queiroz from São Paulo. With the Estado Novo [New State] (1937-1945) elections were suspended. Expansion of the female electorate only occurred after re-democratization in 1945, but the number of congresswomen in each legislature varied between one and two. Although a small number of women had been elected the female vote may have been of fundamental importance, especially for increasing school enrolment.

An effect of the female vote that was not foreseen and that needs to be better

investigated is the growth of schooling for women because political parties were interested in conquering more electors. Politicians were interested in the general literacy of the population, especially that of women, because only people who could read and write could vote. Women were electors, but rarely candidates. In this situation, they knew how to take advantage of the support of politicians for female literacy and recovering their own interests they entered schools *en masse*, thereby cementing their access to education (Alves, 2003).

In the 1960s, in addition to the new *LDB*, an important legal victory was Law 4121, known as the Married Woman's Statute³, which revoked several outdated provisions of the Civil Code of 1916, among which the one that established that the civil status of married women was the same as that of minors, forest workers and the mentally ill, thereby making them civilly incapacitated. The whole structure of the Code was based on the concept of paternal power, in other words, the power of their husbands and fathers (men). Obviously, it was not only the feminist movement that promoted all these changes; other social players contributed to strengthening this new view of the role of woman in society (Prado, 1982).

Scientific and medical advances also contributed to the liberation of women. In the 1960s they began to have access to efficient contraception. Regulation of their fertility allowed them to limit the number of children they had and they spaced out the births or put an end to getting pregnant at all. In doing so they were able to plan the size of their family as well how long they stayed at school and when they entered the labor market. The sexual revolution of the 1960s, which aimed at emancipating women sexually and freeing them from the rigid customs that restricted women to the home and their role as wife and mother, was equally important.

In this period there was a qualitative leap in the situation of Brazilian women, who increased their presence at all levels of education and started having a growing participation in the labor market. There was a confluence of objective conditions, as represented by the modernization processes in the country's production structures and subjective conditions, the latter represented by the new cultural and ideological postures adopted by women.

But the restrictive political conditions imposed by the military dictatorship inhibited the joint action of women and the feminist movement was unable to impose itself as a

³ Other parts of the Code of 1916 that retained gender discrimination were only repealed by the Constitution of 1988 and the Civil Code of 2001.

collective agent of transformation. Only in the 1970s would the women's movement be constituted as a collective entity that was capable of making its mark on the national political scene, especially through its mobilization against shortages and in favor of amnesty and the re-democratization of the country. The movement against shortages brought together mainly poor women and those from the middle classes who organized themselves as neighborhood associations and trades unions to fight against high inflation, for better living conditions and for food safety. The Pro-amnesty Feminine Movement started in 1975 in São Paulo and spread all over the country over the following years until it triumphed with the Amnesty Law of 1979. The rise of the female movement in Brazil, especially after the International Year of the Woman in 1975, struggled against gender inequality and became part of the national political agenda.

In his assessment of the "decade of the woman", Moraes (1985) shows that after the mass movement started again at the end of the 1970s, several female movements sprang up, like *Brasil-Mulher*, *Nós Mulheres e Mulherio* and the female presence on the national stage grew, like in the debates for direct elections for governor in 1982, and in the struggle for *Diretas Já* [Direct Elections Now] in 1984. Conscious of these more general struggles, the female movement began to ask specific questions of the utmost importance to women, like the struggle against gender violence and in defense of their reproductive health. The struggle against domestic violence and other sexist violence led to the rise in organized groups of women, such as *SOS-Violência* [SOS-Violence]. The struggle for the end of violence against women won an important victory with the setting up of the first Specialist Police Station for Women (*Deam*), during the Franco Montoro government in São Paulo. In the field of reproduction rights the major triumph was the implementation of the Assistance Program for Women's Health (*Paism*), which introduced a new concept in health services. Various female NGOs also appeared, like the *Rede Feminista de Saúde* [Female Health Network], *CFEMEA*, *Fala Preta* [Black Talk], *SOS-Corpo* [SOS-Body], *Geledes*, *Cepia*, etc.

In line with all these activities women managed to increase their parliamentary participation in an expressive way. The number of elected federal congresswomen jumped from 2 in 1978 to 8 in 1982 and 26 in 1986. Despite representing less than 10% of the House, these 26 congresswomen had an important role to play in debates about the Constituent Assembly and were fundamental when it came to conquering equal rights for the sexes. The 1988 Constitution became one of the most advanced in the world as far as gender equality

was concerned, when it incorporated and consolidated national and international victories that mark a century of female struggle. The new Constitution established the obligation to hold public exams for filling civil service positions. This measure favored the entry of women with university degrees to various professions, such as becoming lawyers and economists that were essentially male careers.

In the 1990s the Brazilian female movement won other important victories. Women played a prominent role in organizing the International Population and Development Conference that was held in Cairo, in 1994, and the IV World Conference of Women held in Beijing in 1995. In the 1996 elections that were governed by Law 9100/95, the first experience of affirmative action aimed at increasing female parliamentary representation began: by 2002 there were 42 federal congresswomen (Araújo, 2005).

The 20th century ended in a completely different way from the way in which it had begun and of all the female triumphs, reversal of the education gap was one of the most significant. Brazilian education is still lacking in the quantitative and qualitative expansion needed for it to reach the international standards already achieved by countries that have the same level of development. However, over the last few decades the average number of years study has grown a lot for both sexes and women have overtaken men at all levels of education. But the triumphs in education have not been accompanied by other conquests, like entry to the labor market, a greater presence in politics, greater autonomy and liberty, greater sexual and reproduction rights, etc. Sexism is still very prevalent in Brazilian education (Rosemberg, 2002).

The reversal of the gender gap in education was undoubtedly a revolution that changed the history of almost 450 years of female exclusion (or lesser participation) in schools, but a lot still needs to be done for there to be gender equity in Brazil. Black women still have lower levels of education than white women. But the general conditions in which Brazilian women find themselves at the beginning of the 21st century are much better than at any other time in Brazilian history.

Many factors have contributed to this new configuration, especially the social, economic and cultural transformations. We should not overestimate the role of the female movement, but neither should it be forgotten that both in Brazil and in other countries feminist concepts (defended both by women and men) have contributed to the defense of a

fairer world. Women's aspirations for autonomy, whether they come from feminism or not, have undoubtedly contributed to reversing gender inequalities in Brazilian education.

DATA AND METHODOLOGY

In this work we have used data taken from the *IBGE's* demographic censuses of 1960, 1970, 1980, 1991 and 2000. The information we collected has its origin in two types of questionnaire: the simplest is applied to the universe of occupied households and refers to the population's basic characteristics; the broader questionnaire is applied to a sample of households and includes social, economic and demographic information.

The data used in this work refer to the expanded sample. There are differences in the collection and reference periods between the five censuses used and there are also some conceptual changes or changes in the question order. For the purposes of our work, it is necessary to highlight a change introduced in the 2000 Census: only those individuals who had already left school were asked about the highest level course they had concluded; for students it was supposed that the highest level course was the one they were doing at the time.

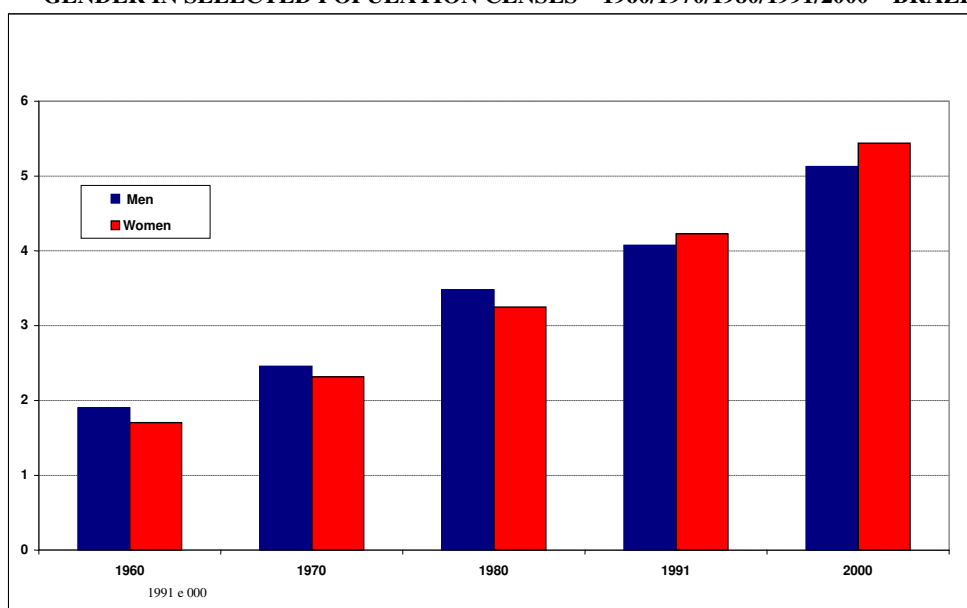
Preliminary analyses comparing the data for family heads in the sample (for whom there was a change in the order) and in the universe (who were directly asked about their last course) indicate that there is a bias in the sense of those who were still at school underestimating the highest level of education. Even if this bias is important when the highest levels of study are being analyzed, in this work it has a lesser effect, because any possible underestimation errors are compensated for when the object of the analysis is the gap between the sexes.

The methodology used for comparing the educational levels of men and women for each birth cohort reduces other possible differences of longitudinal comparison between the censuses. The focus of our analysis is the difference that exists between the various educational levels for each sex, considering the quinquennial age groups of the population 5 years old or over for each census carried out. The number of years study used was the number of years of formal study that had been successfully concluded. Quinquennial birth cohorts were considered, by making them compatible with the quinquennial age group tables of the censuses. For example, in data from the 1980 census the youngest cohort corresponds to the 5 to 9 age group, who were born between 1971 and 1975.

GENDER GAP ACCORDING TO THE AVERAGE NUMBER OF YEARS STUDY

The aggregate data suggest that reversal of the gender gap in Brazil happened in the 1980s. Graph 1 shows the average number of years schooling for men and women in the censuses between 1960 and 2000. We can see that the average number of years schooling increased for both sexes, but women managed to progress more rapidly. In 1960 the average number of years schooling for men was 1.9 and for women 1.7. By 2000 these numbers had increased to 5.1 and 5.5 years, respectively. The difference, which was 0.2 years in favor of the men in the 1960 census, went to 0.4 years in favor of women in 2000. Based on aggregate data reversal in the gender gap has occurred recently. However, a disaggregated analysis by cohort may show that younger women started having higher average schooling rates than men several decades earlier.

GRAPH 1
AVERAGE NUMBER OF YEARS STUDY OF THE POPULATION OVER 5 BY
GENDER IN SELECTED POPULATION CENSES – 1960/1970/1980/1991/2000 – BRAZIL

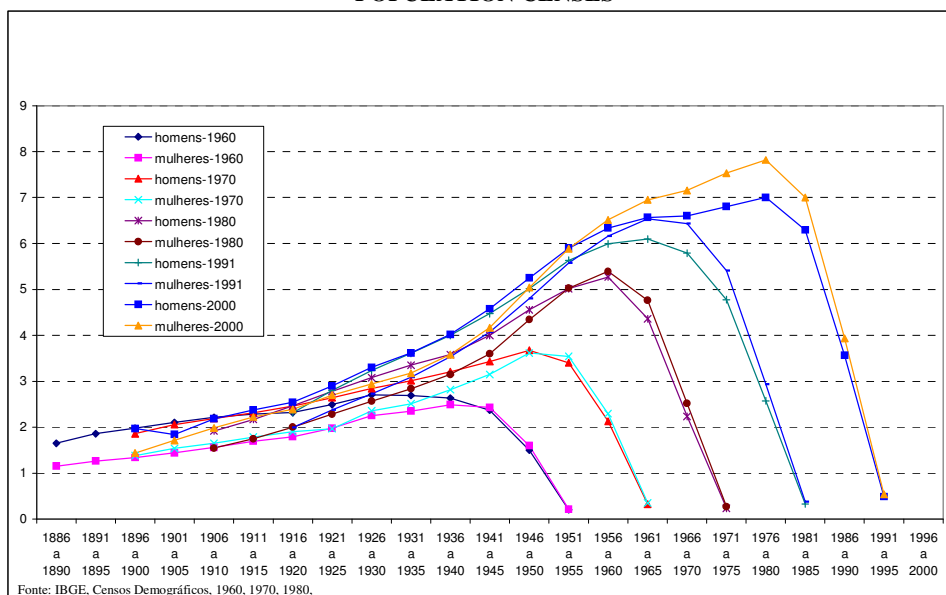


Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 e 2000

Graph 2 shows the same information as Graph 1, but disaggregated by birth cohort. In this graph, each line gives information from a census for each gender. The birth cohorts are on the abscissa axis. Moving vertically, information for each cohort in the various censuses can be observed (and consequently with the cohort at various stages in the life cycle). For example,

the age of the cohort born between 1951 and 1955, in the first census in which it appears - that of 1960 - is between 5 and 9 and has an average of 0.20 years study for men and 0.22 for women. In the 1970 census, the cohort, now ten years older, is between 15 and 19 and has an average of 3.40 and 3.54 years schooling for men and women, respectively. In other words, in the period between these two censuses men added 3.34 years study on average to the number they had in 1960 and women 3.32 years. In the 1980 census this cohort, which is already in the 25 to 29 age band, has an average number of years study that is very similar for men and women, at 5.02 and 5.03 years, respectively.

GRAPH 2
AVERAGE YEARS STUDY BY GENDER AND BIRTH COHORT IN SELECTED
POPULATION CENSES



Source: IBGE. Demographic censuses, 1960, 1970, 1980

In the 1991 census⁴, men from the cohort who are already between 35 and 39, had an average number of years schooling higher than that of women – 5.63 compared with 5.58. In the 2000 census the difference is 5.91 years to 5.89, still in favor of the men. Examining the cohort that had been born ten years previously, i.e. between 1941 and 1945, it can be seen that already in the 1970 census, when the cohort was between 25 and 29, men had a higher

⁴ From the information as tabulated in the 1991 and 2000 censuses the cohorts are not precisely compatible with the information from previous censuses, but we decided to ignore the difference, which is only one year.

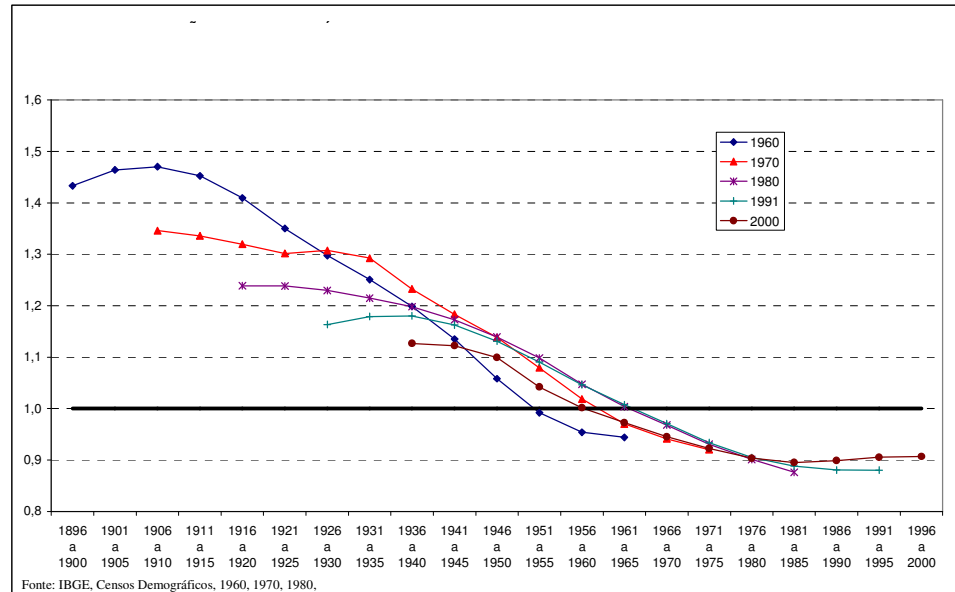
average number of years study than women: 3.43 compared with 3.15, although in the previous census in 1960, the women from this cohort, then between 15 and 19, had, on average, more years schooling than men. For all cohorts, women in the 5 to 9 year age group had more years study than men.

Looking horizontally, from the older birth cohorts to the younger, it can be seen that for each census the gender gap, which was favorable to men, gradually reduces until it reaches an inflection point and becomes positive relative to women. For example, the cohort born between 1916 and 1920 and who were 40-45 years old in the 1960 census had an average number of years schooling of 1.9 for women and 2.32 for men. The same 40-45 age group in the censuses of 1970, 1980 and 1991 had average schooling of 2.36, 3.15 and 4.8 years for women and 2.84, 3.53 and 5.02 years for men. In the 2000 census, on the other hand, the rates were the same for both men and women between 40 and 45.

Generally speaking, the data show that in the older age groups (over 40) men had educational levels that were superior to those of women. However, the picture changes totally for the younger cohorts. Taking as an example the 10-14 age group, we see that since the 1960 census the educational gender gap has reversed: men in the 10-14 age group had 1.5 years schooling in 1960, 2.13 in 1970, 2.24 in 1980, 2.57 in 1991 and 3.6 in 2000, while the women had 1.6, 2.30, 2.52, 2.93 and 3.89, respectively. So, in moving from the older age groups to the younger, women gradually reduce the difference relative to the greater number of years schooling of men and in the younger age groups the difference reverses in their favor.

This pattern is repeated for all cohorts and censuses. In the younger cohorts in each census the greater average schooling of women is obvious. There is, however, an age at which a reversal (inflection point) of the gender gap occurs (see Graph 3 for the ratio of average number of years for men and women per cohort and census year). This phenomenon is in the information for all censuses we analyzed. In the older age groups the ratio between the average number of years study of men and women does not exceed 40%. In the 1960 census men from the cohort born between 1911 and 1915, and who are in the 45-49 age group, had on average 35% more years schooling than women. In 1970 this difference had reduced to 30% and in 1980 to 24%. On the other hand these numbers are evidence of a greater proportion of women returning to school later in life than men⁵.

GRAPH 3
RATIO OF THE AVERAGE NUMBER OF YEARS STUDY OF MEN AND WOMEN BY BIRTH
COHORT IN SELECTED POPULATION CENSES



Source: IBGE. Demographic censuses, 1960, 1970, 1980

In the cohorts born after 1950 the gender gap already reflects the greater schooling of women. For example, for the cohort born between 1951 and 1955 in the 1960 census women had an advantage over men of a little more than 5%. In subsequent censuses the difference in favor of women increased by even more.

These data confirm the hypotheses presented in the initial sections of this article, that economic, social and political conditions in Brazil, along with the engagement of women, made possible a reversal in the gender gap in the second half of the 20th century. It was the progressive accumulation of objective and subjective conditions that made these changes feasible. Reversal of the gender gap began with elementary education, moved to high school and arrived at the higher education level in the 1970s.

Graph 3 shows that before 1950 the ratio between men and women favored the former. As from the 1950s this ratio started favoring women.

⁵ Another possibility is that the difference in mortality rates between the social and economic levels, for which education is a proxy, is less pronounced among men than among women.

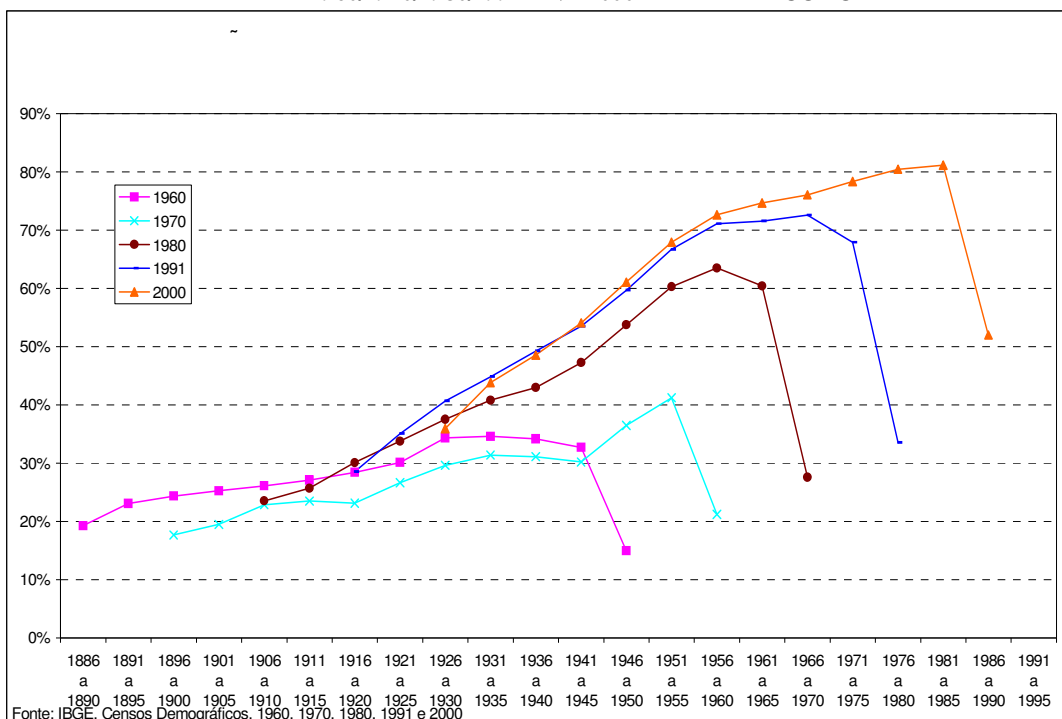
GENDER GAP IN ELEMENTARY EDUCATION

First cycle of elementary education

Graphs 4 and 5 give the declared proportions of men and women who have completed the first cycle of elementary education, by birth cohort for the censuses from 1960 to 2000. For both sexes these proportions are in the form of successive and growing waves. More recent censuses correspond to waves that overlap the previous ones and become bigger.

With the exception of the 1970 census, which has data that seem inconsistent with the others, which may be explained by the existence of a fifth and sixth primary grade, as well as an admission year being included in the school system and consequently in the census questionnaire, what we can observe both in Graph 4 (men) and Graph 5 (women) is that the cohorts that were born closer to the beginning of the century have a smaller proportion of individuals who completed the first cycle of elementary education and that greater growth occurred with the cohorts born more towards the end of the century.

GRAPH 4
PROPORTION OF MEN WHO COMPLETED THE FIRST CYCLE OF ELEMENTARY EDUCATION.
BRAZIL – 1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT

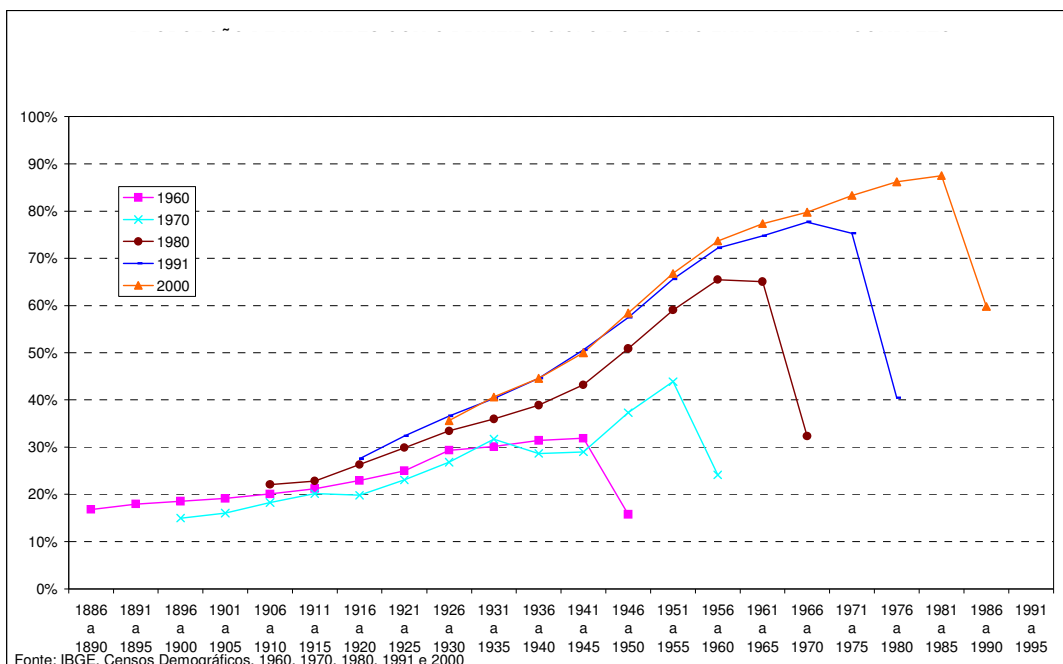


Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

Between censuses there is almost no difference for the oldest cohorts. For the first cohort that has non-void values for each census (in the 10 to 14 age group) there is a significant difference when compared with the information from the next census, which may be explained by the fact that despite 10 being a suitable age for concluding the first cycle of the elementary course there is a significant age/grade lag. Furthermore, there is a greater age/grade lag with men at this level of education than with women; they take, therefore, longer to conclude these four years formal education.

Note the fact that women achieved greater gains than men, as evidenced by the higher values achieved by the younger female cohorts when compared to the male cohorts, as well as the lower values for older female cohorts, once more when compared with male cohorts. In the younger cohorts the proportion of women who completed the first cycle of elementary education is 80% (compared with 70% for men), while in the older cohorts this proportion is around 18%.

GRAPH 5
PROPORTION OF WOMEN WHO COMPLETED THE FIRST CYCLE OF ELEMENTARY EDUCATION.
BRAZIL – 1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



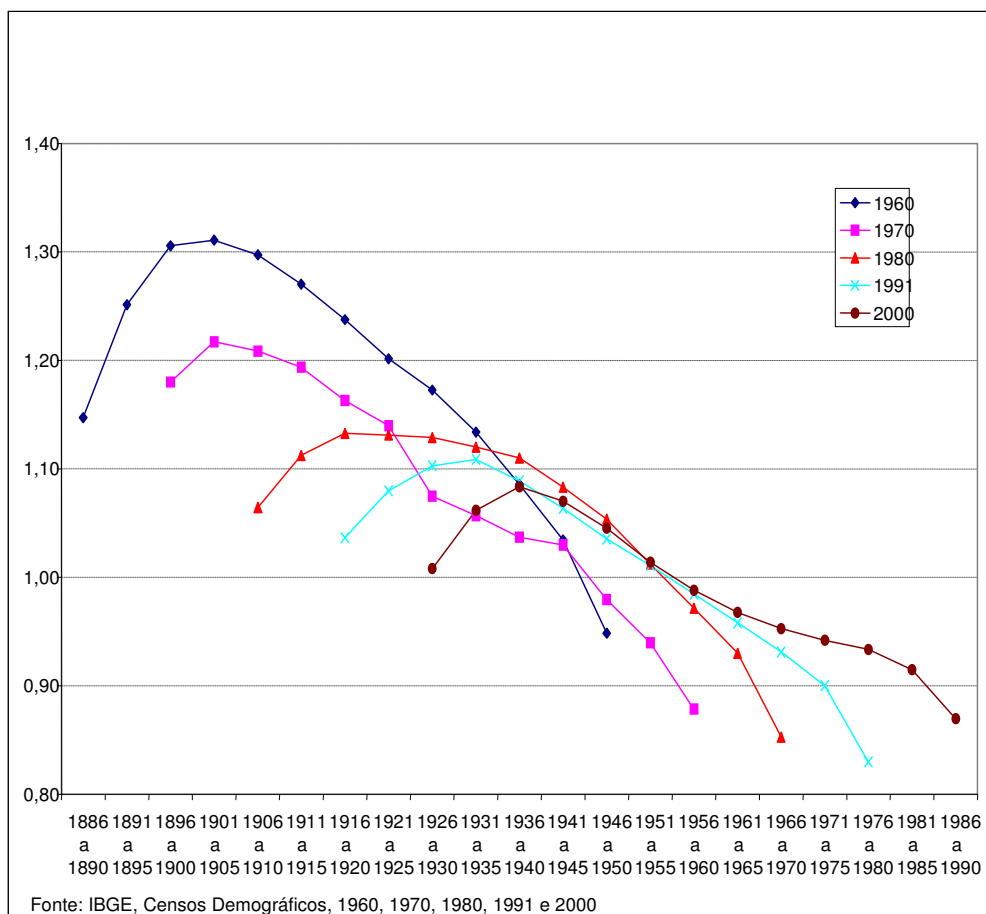
Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

Graph 6 gives the ratio of the proportions between men and women and better summarizes the relative evolution between the sexes. When the ratio is 1, the same proportion

of men and women are completing the first cycle of the elementary course. When the ratio is greater than 1 more men are completing the first cycle, and when smaller than 1, more women are. For the older cohorts the proportion of men who completed the first cycle of elementary education was as much as 20% greater than that of women. At the other extreme, in the younger cohorts, the inverse situation occurs, and almost 20% of the women have completed the first cycle of elementary education, and the more recent the census the more this difference has increased.

The reversal point of the gender gap in elementary education occurred for cohorts born as from the 1930s, in other words, after the end of the Old Republic and the start of the endogenous growth phase in the Brazilian economy and formulation of the first social policies. This process, however, was not linear.

GRAPH 6
RATIO BETWEEN THE PROPORTION OF MEN AND WOMEN WHO HAVE COMPLETED
THE FIRST CYCLE OF ELEMENTARY EDUCATION – BRAZIL - 1960/1970/1980/1991 AND 2000 – BY BIRTH
COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

When we examine the younger cohorts from a given census (10 to 20 years old), we can see that the difference that exists between men and women reduces over time (this is notable when in the following census the proportion of men/women of this same cohort, who are now ten years older, is greater), confirming that in this particular case the age/grade lag should be greater and increasing with age among men. Between censuses men reach a conclusion level for the first cycle of the elementary course that is closer to that of women.

The lag is not followed, at least not as general behavior, by abandonment of study before the end of this level. In the 1980 census, for the cohort born between 1966 and 1970, the ratio of the proportion of individuals who had completed the first cycle of elementary education was 0.8526, indicating that there were almost 15% more women than men who had completed the first cycle. But in the 1991 census the ratio of men/women in this same cohort is 0.9767, indicating that the difference is a little more than 2%, in other words, between the 1980 and 1991 censuses more men than women finished the first cycle, thereby reducing the gap seen in the previous census.

For the first age group considered in the data (10 to 14) this gap has grown over time, possibly indicating an increase in the difference in the age/grade lag between men and women. In 1960 it was 5%, went to 12% in 1970, to 15% in 1980 and reached 17% in 1991. The change in the slope of the line that joins the first and second youngest age groups in each census, allied to the tendency of the groups that follow on, is consistent with this hypothesis. For the older cohorts, on the other hand, the behavior is the opposite, given that it is the women whose educational level increases between censuses⁶.

For the cohort born between 1906 and 1910, the ratio calculated from data taken from the 1960 census indicates a figure of 1.17, in other words, almost 17% more men have completed the first cycle. But in 1980 this figure falls to 1.0. These data seem to indicate that the women who were older at the end of the 20th century were going back to school or to

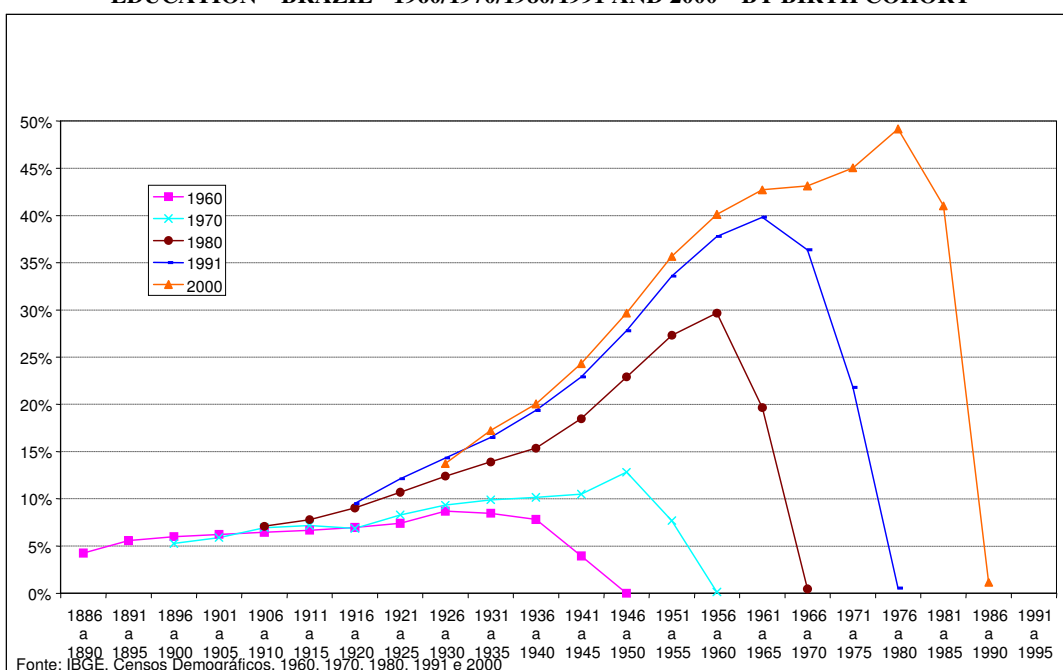
⁶ Another possible explanation is the difference in mortality rates between the social classes. The mortality rate of low income individuals is higher than that of high income individuals. As this differential is greater for men than for women, particularly for young males, the differentiated improvement of men may reflect the higher mortality rate of low income individuals, which has a high correlation with low levels of schooling. In other words, the improvement may be explained not by more years study among men but by the elimination of individuals that have poor schooling levels.

supplementary courses. Comparing the different curves a rocking movement can also be noted: the older censuses correspond to more sloping and higher curves and the temporal movement is downwards and horizontal.

Second cycle of elementary education

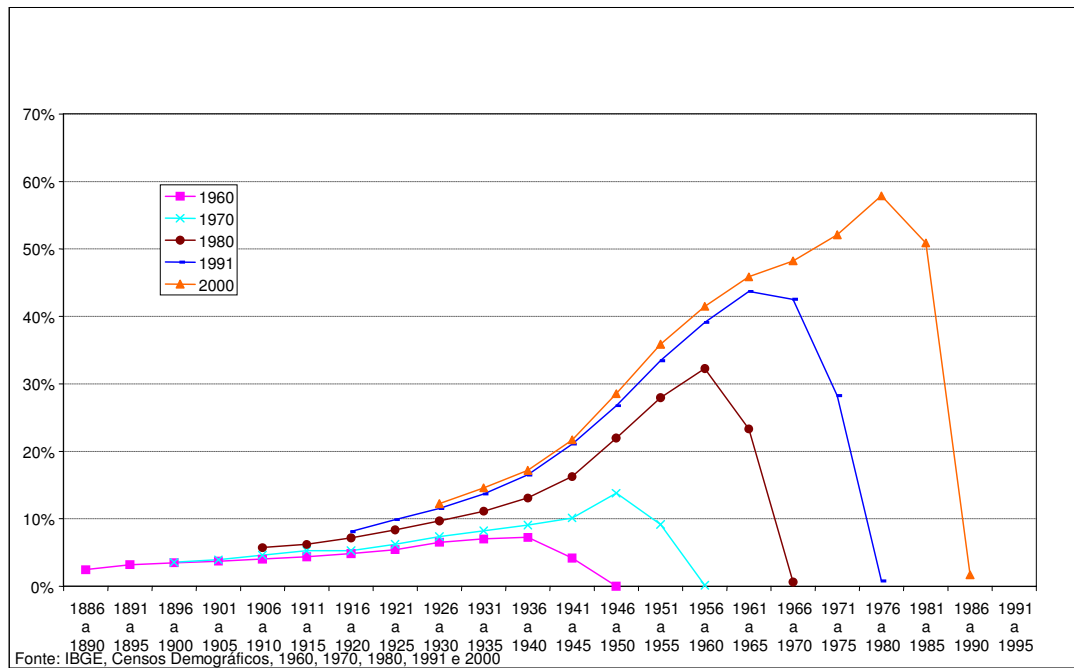
When the same information is considered for elementary education the behavior is similar to that of the first cycle. Graphs 7 and 8 show for men and women, respectively, the proportion of individuals who have completed their elementary education by birth cohort. Here the picture of successive waves growing in size is clearer. The peak for women occurs in the 2000 census for the 20 to 24 year age group, with a figure of 58.5%, while for men in the same age group the proportion of individuals who finished their elementary education is 49%.

GRAPH 7
PROPORTION OF MEN WHO HAVE COMPLETED THEIR SECOND CYCLE OF ELEMENTARY EDUCATION – BRAZIL - 1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

GRAPH 8
PROPORTION OF WOMEN WHO HAVE COMPLETED THEIR SECOND CYCLE OF ELEMENTARY
EDUCATION – BRAZIL - 1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT

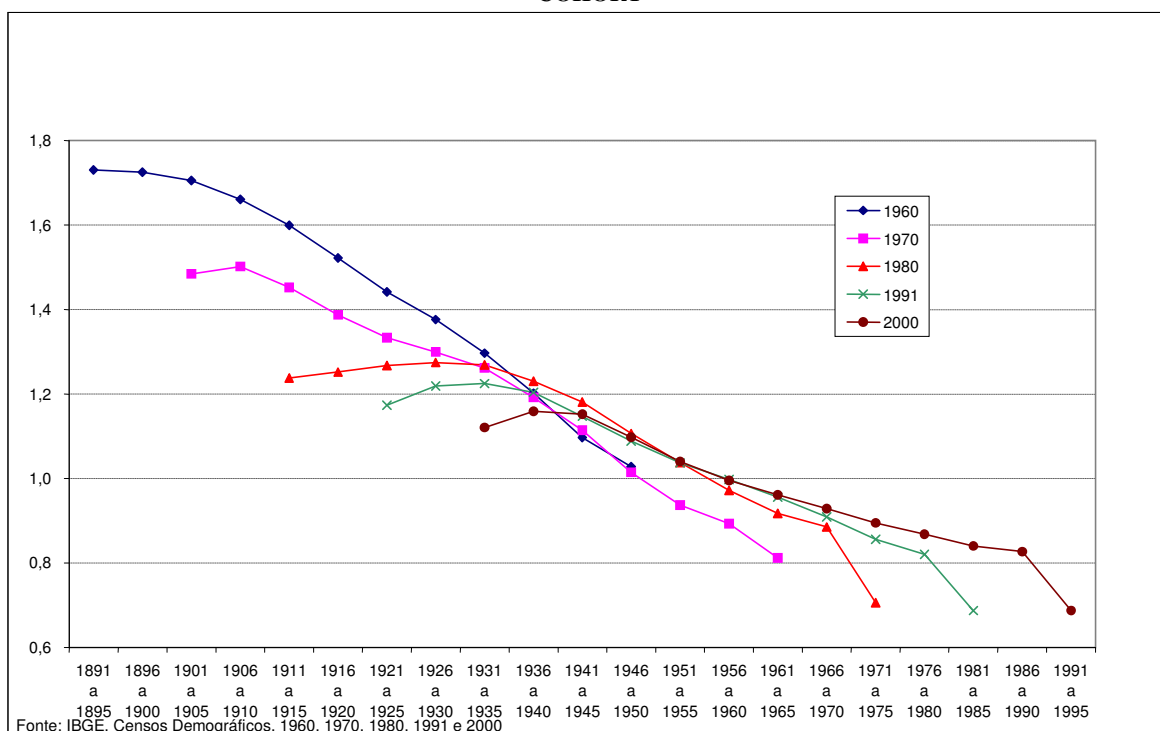


Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

Graph 9 shows the ratio of the proportion of male and female individuals who have completed their elementary education; the behavior characteristics are the same as those in Graph 6: in the younger cohorts in each census there are values less than 1 (indicating a greater proportion of women). In all age groups in the 1960 census the proportion of men who have completed their elementary education was greater than the proportion of women; in the older cohorts this difference was as much as 20% in favor of the men.

As from the 1970 census the proportion of women who have completed elementary education increased a lot, especially for the younger cohorts who lived through the structural and institutional transformations that occurred in Brazil after the Revolution of 1930 and especially the victories they won after 1945. These female victories in education accumulated over the second half of the 20th century to such a point that the data for 1991 and 2000 indicate only three or four age groups where there is a greater proportion of men who have completed their elementary education. The data from these two surveys show also that for the younger age groups the educational difference between men and women exceeded 30%.

GRAPH 9
RATIO BETWEEN THE PROPORTION OF MEN AND WOMEN WHO HAVE COMPLETED THEIR SECOND CYCLE OF ELEMENTARY EDUCATION – BRAZIL – 1940/1950/1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

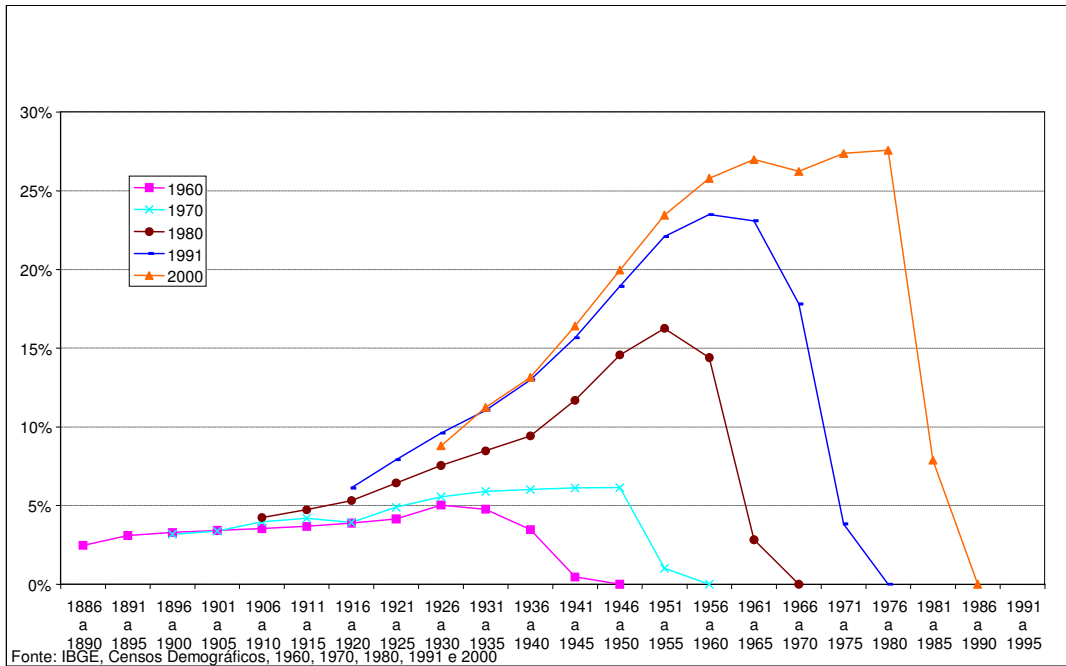
GENDER GAP IN HIGH SCHOOL AND HIGHER EDUCATION

High school

Graphs 10, 11 and 12 show the same information for those who have completed at least high school. In Graphs 10 and 11 the image of successive growing waves persists. The differences between the two are basically that the female waves are more concentrated, with a more pronounced peak and beginning from a lower level. This confirms the analysis that female victories in education occurred in a progressive way; women only started going to high school in a big way after 1960.

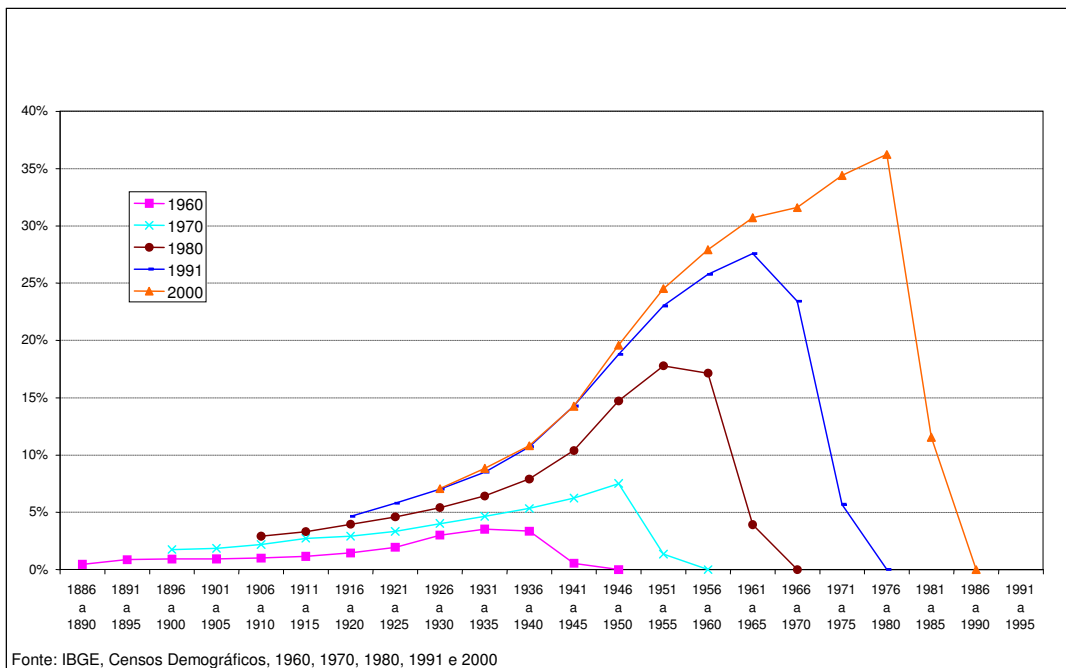
The last female wave, as seen in the data from the 2000 census, reaches a higher peak (36% compared with 28% for men) and at a cohort that is five years younger than that of the men.

GRAPH 10
PROPORTION OF MEN WHO HAVE COMPLETED THEIR HIGH SCHOOL EDUCATION – BRAZIL –
1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

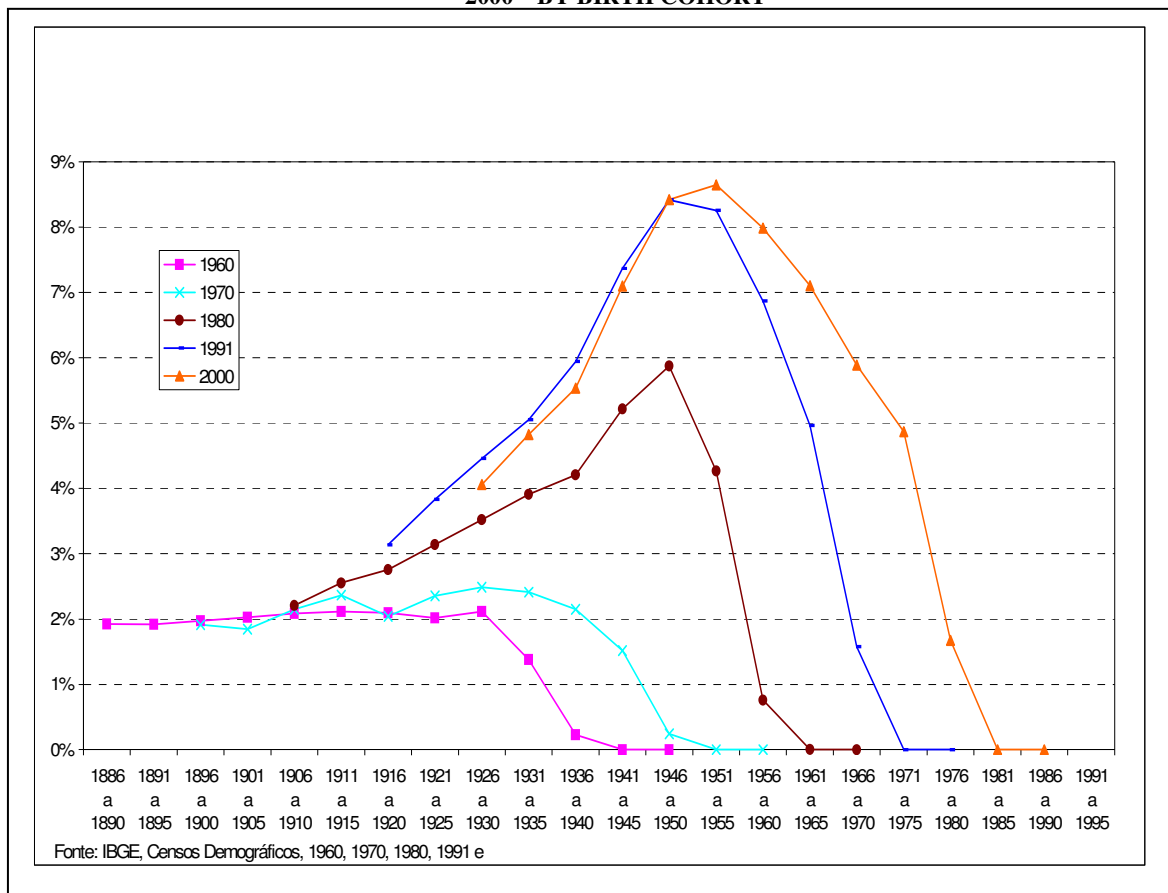
GRAPH 11
PROPORTION OF WOMEN WHO HAVE COMPLETED THEIR HIGH SCHOOL EDUCATION – BRAZIL –
1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

notable difference is the level at which the waves start, which is around 2% for men and 0.1% for women. As happens with high school education the female waves are more concentrated and reach a peak for a cohort five years younger than for men, albeit at the same wave height (around 8%). Here also the difference between censuses is most marked, showing that studying later in life is common in both sexes.

GRAPH 13
PROPORTION OF MEN WHO HAVE A UNIVERSITY DEGREE – BRAZIL –1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT

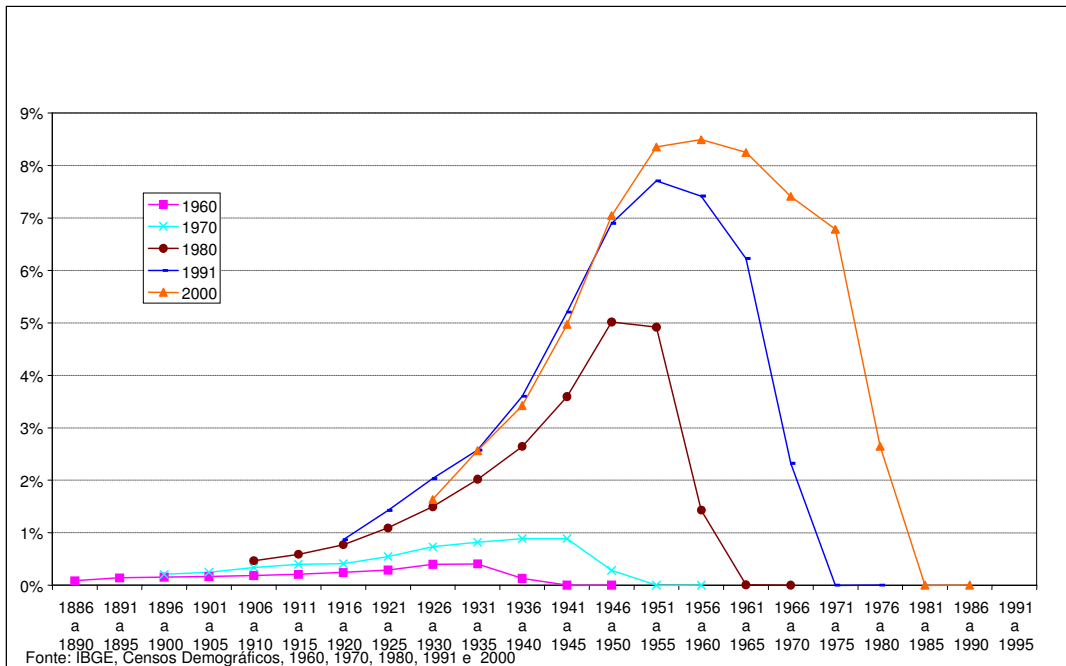


Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

The behavior we have already seen for older study cohorts for those concluding courses that precede higher education (first and second cycle of elementary education and high school) seems to be amplified in the particular course under discussion. The proportion of males that finish a higher education course is almost 20 times greater than for females from the oldest cohort in this study (see Graph 15). On the other hand the proportion of women who conclude a university course in the youngest cohort (1971-75) is almost twice as high as for men. These data show that the reversal of the gender gap in higher education courses has

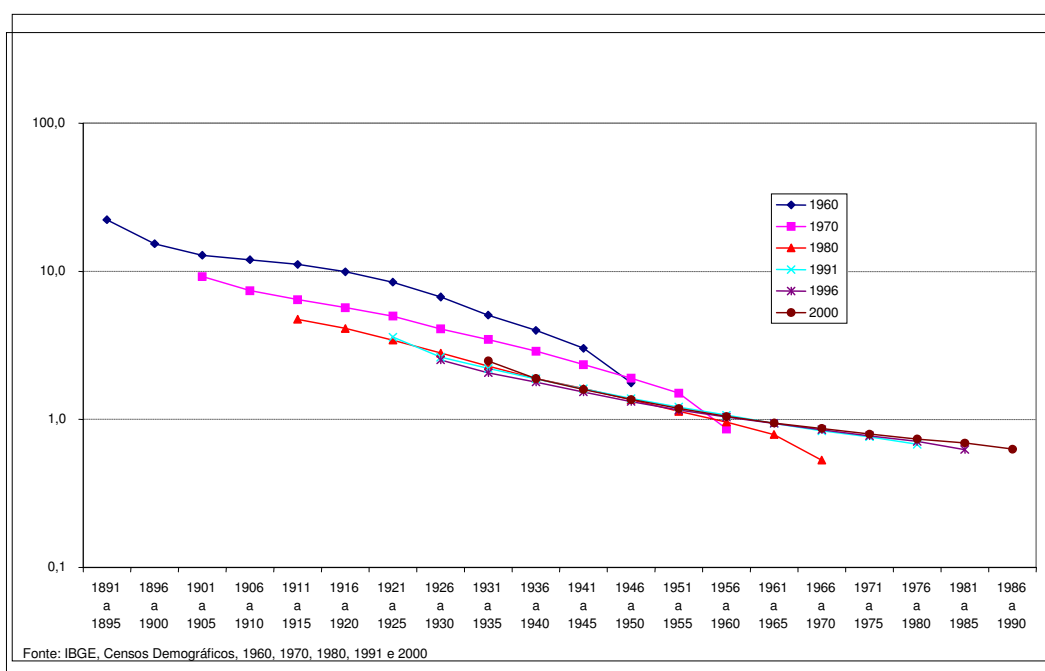
been the most significant conquest of women, because they have not only reduced the differential from almost 20 times, but have also achieved a difference of almost twice that of men.

GRAPH 14
PROPORTION OF WOMEN WHO HAVE A UNIVERSITY DEGREE – BRAZIL – 1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

GRAPH 15
RATIO OF THE PROPORTION BETWEEN MEN AND WOMEN WHO HAVE A UNIVERSITY DEGREE –
BRAZIL –1960/1970/1980/1991 AND 2000 – BY BIRTH COHORT



Source: IBGE. Demographic censuses, 1960, 1970, 1980, 1991 and 2000

In higher education, also, the structural and institutional transformations that have occurred in the country have made it possible for educational possibilities to be opened up to women. For example, when the Guidelines and Bases of Brazilian Education Law (*LDB*) of 1961 made the normal course equivalent to the “scientific” course (high school) it created an opportunity for a greater number of women to apply for university. The university entrance exam based on knowledge criteria without any gender discrimination favored women who had a better academic performance.

FINAL CONSIDERATIONS

There are undoubtedly significant differences between the schooling levels of Brazilian men and women. For almost 450 years the gender gap in Brazilian education favored men, but in the second half of the 20th century the gender gap reversed and women overtook males in terms of average number of years schooling.

However, overall statistics, such as for example the number of years study for the population over 18, may be misleading, because in the same indicator they include the

differentiated behavior of several cohorts. What we can conclude from the data is that women in the younger age groups have not only reduced the differences relative to men as far as schooling is concerned but have been gaining ground on them.

Some authors, like Rosemberg (2001) and Beltrão ETeixeira (2005), consider that although there have been female advances in education, there is still a gender bipolarization in the human-exact science courses, with women still mainly involved with “easier” or less socially valued careers. However, studies that take into consideration generational differences show that women between 20 and 29 in the 2000 were already making significant advances in careers considered to be “more difficult” and of greater social prestige (Guedes, 2004).

Even considering that there are still sexist differences in education, Brazil is an example of a country that has managed to reverse the gender gap in education and eliminate the educational shortfall of women relative to men. In this aspect the female victory has been spectacular, although the level and quality of Brazilian education lags far behind that of other countries that have the same level of social and economic development. Brazil’s case can serve as an example to the extent that the universal policies adopted by the country, such as women’s right to vote, egalitarian education and the civil and family rights of the 1988 Constitution, have contributed to Brazilian women being able to advance in their conquest of higher levels of education.

But if the gender gap keeps on growing, even if it favors women, Brazil will be going against the recommendations of UNO’s International Conferences, which indicated the need for gender equity in all fields of activity. Men with much lower levels of education than women may make dialogue and co-existence between the sexes difficult. Obviously, it is necessary to raise the levels of schooling of men and not to interrupt the rise of women. At the same time the quality of education for both sexes needs to be improved.

It is outside the scope of this article to deal with the complex relationship between the entry of women to higher levels of education and discrimination in the labor market. It has to be said, however, that many women are looking for greater educational qualifications not only for their own personal achievement, but also to overcome the occupation barriers in the labor market that generally gives men greater opportunities, even those who have fewer years study.

Therefore, female conquests in the educational field have not been accompanied to the same degree by conquests in the labor market. Women have reversed the gender gap in education, but they have not reversed the occupation and salary gaps. For there to be social

justice and gender equity in Brazil in the 21st century men need to advance at all levels of education and women need to reverse the gender inequalities in the labor market since their educational conquests cannot be analyzed outside the context of more general social gender relationships.

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