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Brazil and China: towards a mass and universal educational system

Danilo de Melo Costa
Faculdade de Ciências Econômicas/FACE,
Programa de Doutorado e Mestrado em Administração (PDMA),
Universidade FUMEC, Belo Horizonte, Brazil

Abstract

Purpose – China has invested massively in higher education, reaching a mass system, envisaging, as a next step, reaching a universal system. Brazil is still an elite system but needs to create adequate public policies to migrate to a mass system. The purpose of this article is to analyze the paradigms for a mass educational system, with regard to the quality of education offered, and the prospects for achieving a universal system, with Brazil and China as a reference.

Design/methodology/approach – The author applied an exploratory and qualitative method, through categorical content analysis. The data were collected through nine interviews with government managers, 15 unstructured (open) questionnaires to specialists in higher education and four student leadership.

Findings – The results indicate that the change from an elite system to a mass system impacts quality, as there is an inevitable change in experience. However, this modification does not testify against the mass system, as it is necessary for a nation to pass through it and structure itself adequately in order to reach the universal system, a path desired by both countries.

Originality/value – The study presented the reflections observed by the migration from the elite system to the mass system from the main stakeholders of the system in China and the prospects for Brazil to become a mass system. Additionally, it presented the perspectives for both countries to achieve the desired universal system.

Keywords Higher education, Mass system, Universal system, Brazil, China

Paper type Research paper

Introduction

Higher education has always played a major role in the success of nations; however, in recent decades, the importance of such education level has boosted. Higher education started to be considered one of the main factors to achieve recognized development indexes. The importance of education has been considered by several countries that aim at investing in more effective public policies for the country's own progress. According to UNESCO (2011), higher education has the role of providing learning activities in specialized areas of education, at a high level of complexity and specialization. This level of education must go beyond academic education, because it also includes an advanced professional aspect to contribute to the advancement of society. Altbach (2013a, b) corroborates with such statement by highlighting the importance of research universities in developing countries, such as Brazil and China.

In Asia, it is possible to observe a curious phenomenon in the field of education, as the continent grows as much as it invests in education. In recent years, the Asian discovered this formula of success and began to invest heavily both in basic and higher education. Countries such as China are now conducting research within its own universities and then commercializing the results, as well as increasing investment in higher education (Mahmood & Singh, 2003). This

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new phenomenon begins to generate positive results for the country, which in 2020 has universities such as Tsinghua University China (31), Peking University (51), Shanghai Jiao Tong University (80), and Zhejiang University (81 in the group of the 100 largest universities in the world (Webometrics, 2020). Extending the analysis to the 150 best universities in the world, considering the Webometrics, ARWU and NTU, the presence of several other Chinese universities are also to be found (Webometrcis, 2020; Arwu, 2020; NTU, 2020).

Reports from the Organization for Economic Co-operation and Development (OECD) also demonstrate the remarkable growth of the Chinese higher education system. According to the organization, in 2015 China was the largest contributor to the OECD-G20 group of higher education students. There is a perspective for the higher education system to grow at an average rate of 2.6% per year, between the years 2015 and 2030. This occurs in the country because the demand for higher education has grown rapidly among the middle class population. And while China is expanding its higher education sector at a rate unmatched by what has historically happened in many other countries, demand is still greater than supply. For this reason, the Ministry of Education of China works closely with the provincial education authorities and higher education institutions to define all policies related to enrollment in higher education and to ensure that this enrollment policy is in accordance with central government's priorities (OECD, 2016, 2019, 2020).

In Brazil, the funding to expand higher education is mainly accomplished through public programs, such as: Program to Support the Plans for Restructuring and Expansion of the Federal Universities [Reuni (no longer active)], University for All Program (Prouni); Financing Fund for Higher Education Students (Fies); Federal Institutes of Education, Science, and Technology (IFETs); and the Open University of Brazil (UAB). While investments are being made and highlighted, they are still considered scarce in the country, especially if compared to countries such as China.

Another factor worth observing regarding Brazil is that it is a developing country and therefore, most families cannot afford to fully fund the studies in a private higher education institution. Without opportunity in public and private universities, Brazil has an elite educational system, since the access to higher education is not democratized.

According to the OECD (2019), although the percentage of young adults (25–34 years old) with higher education has doubled within a decade, Brazilian rates remain below the average of the OECD and other Latin American countries. The report shows that in 2008, 11% of Brazilians aged 25–34 years had a college degree. In 2018, it was 21%. This figure is similar to that found in Mexico, but is below other Latin American countries, such as Chile (25%) and Argentina (36%). This percentage corresponds to half the average for OECD countries. The explanation for such indexes is given by the low rates of high school completion and the concentration of seats in private institutions (corresponding to 75% of all enrollments), which represents a great challenge for Brazil and differentiates it from the Chinese system, where most seats are public.

For this reason, there is a gap to be explored with regard to the proposition of structural changes to assist higher education, with base practices already being carried out in other countries. Therefore, this study uses as a reference the mass higher education systems in China and the elite higher education system in Brazil, based on the assertion Lang & Zha (2004, p. 341), who argue that "comparisons between pairs can provide a basis for a rational assessment of the differences and similarities, and identification of strengths, weaknesses, and potential opportunities or niches."

In addition to the continental dimension, characteristic of the two countries, the reason for this choice is linked to other factors. Both are members of the BRIC, which is a group of emerging market countries with similar economic growth comprising Brazil, Russia, India and China. According to Altbach (2013a, b), these countries are expanding rapidly, and many observers see them as dominant economies in the coming decades, since they show

significant growth in their higher education systems, with the prospect of expanding and improving in the coming decades. It is important to notice that Brazil and China also established an academic and scientific partnership through the "Seminar to Strengthen the Internationalization of Higher Education: Opportunities for Brazil and China" (Capes, 2012). The partnership through internationalization is highlighted by Altbach & Knight (2007), demonstrating the importance of countries exploring these opportunities.

For this reason, while understanding the importance of studying all the BRIC countries in this context, the research was limited to studying Brazil and China because China has invested and improved its access and retention indicators in higher education, which can be exemplified by the 337.5% growth in the gross enrollment rate in tertiary education between the years 1999 and 2006 (UNESCO, 2008). Therefore, Brazil can learn from China in relation to the migration from an elite to a mass system, especially in relation to the greatest impacts observed.

Based on this information, this research addresses a relevant issue in the national development scenario, i.e. to analyze the aspects for a mass educational system, with regard to the quality of education offered, and the prospects for achieving a universal system, with Brazil and China as a reference.

Brazil's main policies for expansion in higher education

The public funding from the Federal Government has been considered largely responsible for the recent expansion of the higher education phenomenon in the country through public, private, distance learning, and technology initiatives. This funding has been applied in various public policies in order to promote the expansion in the above-mentioned arrangements. In the public initiative, investments are made through the Program to Support the Plans for Restructuring and Expansion of the Federal Universities (Reuni); in the private sector, the resources are applied through Fies and Prouni programs; with regard to distance learning, the UAB program has been responsible for the receipt and use of funds. Finally, in technological education, resources are applied in the new Federal Institutes of Education, Science, and Technology (*Institutos Federais de Educação, Ciência e Tecnologia*, IFETs).

Program to Support the Plans for Restructuring and Expansion of the Federal Universities (Reuni) was released on April 24, 2007, as an integral action of the Education development plan (*Plano de Desenvolvimento da Educação,* PDE). Reuni aims to demonstrate the strategic role of the federal universities for economic and social development of the country. Its main objectives were the increase in seats and reducing dropout rates, focusing on classroom courses for graduation (Brasil, 2007a). Having operated for 5 years (2007–2012), Reuni had in its planning the distribution of more than R$ 2 billion to the federal universities, but to receive these resources, universities should improve many aspects, especially regarding human resources, physical structure, and quality of the undergraduate courses offered (MEC, 2019).

The biggest criticism of this public policy refers to the concern solely with quantitative expansion, forgetting the qualitative aspect that guides federal universities (Lima, Azevedo & Catani, 2008; Léda & Mancebo, 2009; Tonegutti & Martinez, 2007; Paula, 2009). On the other hand, other authors argue that the program is a first step towards a public higher, quality education in Brazil (Palácios, 2007; UNE, 2008). Finally, some public managers and university leaders defend the need to expand the program, even suggesting the creation of Reuni 2 (Costa, Costa & Barbosa, 2013).

The Financing Fund for Higher Education Students (Fies) was created by Provisional Measure (*Medida Provisória,* MP) No. 1,827 of May 27, 1999, in order to finance the graduation of economically disadvantaged students in private institutions. On July 12, 2001, this MP was converted into Law No. 10,260, and on January 14, 2001, as amended through a new law (No. 12,202), which proposed changes to allow public education professionals and doctors in family health programs to reduce the debt balance and use of debts with the National Social

Security Institute (*Instituto Nacional do Seguro Social*, INSS) as FIES credit by educational institutions, among other provisions (Brasil, 2010). From 1999 onwards, FIES has granted such financing to more than 560,000 students and has allocated about R$ 6 billion in resources (in the contracting and renewal of funding).

While some authors, such as Carvalho (2006), criticize this public policy by claiming that even if you lower the interest rate, the amount charged is still beyond the reach of poor students who, for the most part, cannot have a satisfactory return after graduation to start the repayment of amounts financed. Other authors believe that the FIES is another initiative aimed to increase the options of Brazilian students who have interest and the need to pursue higher education (Duarte, 2004; Andrés, 2008; Campista, Baptista, Coelho, Almeida Filho & Xavier, 2009). In any case, for studying in the private sector there is a preference of the student body for Prouni (which emerged in 2005), which is considered a normal choice, since the students participating in Prouni do not have to make any reimbursement to the government in the future (Brasil, 2010).

The University for All Program (Prouni) was created by MP No. 213/2004, which was converted into Law No. 11,096 on January 13, 2005 and regulated by Decree No. 5,493/2005, and its ultimate goal is to award grants of 100%, 50%, and 25% to undergraduate students in private philanthropic or for-profit higher education institutions. Students are pre-selected by the National High School Exam (*Exame Nacional do Ensino Médio*, ENEM) and the socioeconomic profile, calculated by the family income per capita, which may not exceed a minimum and a half minimum wage for full scholarships and up to three minimum wages for partial scholarships. Who can apply for the scholarships: students who have attended all their high school in a public school or in private institutions (with a 100% scholarship); students with disability; and public school teachers (for undergraduate courses, higher normal, and pedagogy), needing to maintain a utilization of at least 75% of points distributed to be able to keep the grant (MEC, 2018).

According to Andrés (2008), although they indicate improvements, indicatives of success of the program can already be observed in its first year of operation, in which 60% of private higher education institutions have joined. The number of scholarships granted is also considered an important finding, since Prouni has offered more than 1.7 million partial and full scholarships since its inception (MEC, 2018).

Like other programs, Prouni has also received some criticism, the main one regarding the quality of the higher education delivered to scholarship granted students, since most private higher education institutions are of dubious quality (Corbucci, 2004; Carvalho & Lopreato, 2005; Carvalho, 2006; Catani, Hey & Gilioli, 2006). However, Andrés (2008) argues that as the program still needs some adjustments, the important step that it represents for the democratization of higher education in the country is undeniable, especially when considering that Prouni alone created 112,275 jobs in year 2005, almost all of what was offered in all federal network on the same date (around 133,000 jobs), increasing access to 84.4% at that time.

The Open University of Brazil (UAB) was released with strong support from decree No. 5,622 of December 19, 2005 (which regulates distance education) on June 8, 2006 by decree No. 5,800, when UAB was established, focused on the development of distance higher education and with a mission to internalize the provision of courses and programs of tertiary education in Brazil (Segenreich, 2009).

The UAB structure consists of an integrated system of public universities that aims to offer higher level courses to a percentage of the population that cannot afford to take an in-person course, either because there is no such course in their region, or due to financial difficulties. Another UAB front is to promote the integration between the three levels of government, Federal, State, and Municipal, with federal public universities (MEC, 2013).

Critics of the UAB highlight the mass training, which may represent a loss of quality for graduate students, mainly because the goal is to prepare basic education teachers. Fear is

leading to poor basic education with professionals who have not received adequate higher education (Zuin, 2006; Costa, 2007; Freitas, 2007; Segenreich, 2009; Coelho, 2009). In turn, the supporters of the program show that it represents a unique form of democratization and of taking higher education to previously unimaginable places, and that the average of one mentor for every 25 students perfectly meets the expected quality (Dourado, 2008; Lemgruber, 2008; Maia, Dantas & Schneider, 2009).

The Federal Institute of Education, Science, and Technology (Ifet) was established by Decree No. 6,095 on April 24, 2007, whose goal was to establish guidelines for integrating federal institutions of technological education in Federal Institutes of Education, Science, and Technology within a scope called the Federal Network of Technological Education. According to the respective decree, each institute adhering to the proposed change would be considered a basic, professional, and higher education institute, divided into several campi, offering vocational and technological education in various ways.

With regard to tertiary education, institutes should provide: undergraduate (bachelor and technological) courses; *lato sensu* post-graduate courses; *stricto sensu* post-graduate programs (preferably with a professional perspective); degree courses (Brasil, 2007b).

Some questions were observed about the obligation of the federal institutes to offer undergraduate courses (minimum 20%), which for some authors is negative (Moura, 2005) and for others is positive (Franco & Pires, 2009). Another point discussed regards the speed of reorganization, which may have been carried out without much planning by the government (Xavier Neto, 2008). Either way, the initiative can be seen as another step in the expansion and in providing higher education in the democratized country (Silva Júnior, 2009).

Finally, in 2014, the federal government adopted the National Education Plan (PNE) for 2014–2024, which establishes 20 goals to improve access to quality education. Among these 20 goals, three goals refer explicitly to higher education: Goal 12, increasing gross enrollment in higher education to 50% and net enrollment to 33% of the population aged 18 to 24 until the year 2024; Goal 13, which seeks to raise the quality of higher education and increase the level of qualification of the entire teaching workforce in public and private institutions until the year 2024; and Goal 14, which aims to increase participation in stricto sensu graduate programs until the year 2024, offering 60,000 master's courses and 25,000 doctorates a year (OECD, 2018).

Chinese main policies for expansion in higher education

In 1993, the document entitled "Outline for Educational Reform and Development in China" (1993) highlighted the various strategies of the country aiming at development, including the belief in education and science as pivot areas to guide the expected modernization and bring the nation up to the most developed countries in the world. Actions such as decentralizing the administrative structure, increase university autonomy, reorganizing universities for efficiency, effectiveness, and expansion, as well as diversification of funding sources have been strengthened. All these points were subsequently legislated by the so-called Higher Education Law, which was implemented on 1 January 1999, representing a new institutionalization of governance and management of the Chinese higher education (Zha, 2009).

Levin (2010) says that during the celebrations of the hundredth anniversary of the University of Peking, China's president at the time, Jiang Zemin, publicly revealed the country's intentions to seek a broad expansion of its higher education system, and this is what actually happened. In 1990, only 3.4% of the age group between 18 and 22 years were allocated in higher education. In 1995, this percentage reached 7.2%, and in 2000, the number reached the astounding rate of 12.5%. It was the beginning of an unprecedented expansion in the global scenario (Hayhoe & Zha, 2004).

However, the actual process of massification of higher education begins in 1999, with a noticeable increase in enrollment, particularly in areas involving science and technology. At this time, the engineering institutions have increased the variety of its subjects in order to increase the number of students enrolled and also to make some of its universities world leaders. Seeking to vitalize education for the century that would start, the following goal was defined: increase the gross participation in higher education to 11% in 2000. Subsequently, the goal becomes more audacious, seeking to achieve the indicator of 15% of young people aged 18–22 years by 2010, since this is an internationally recognized limit for a mass higher education (State Council, 1999). The results indicate a 47.2% leap in the number of new registrations, out of 1.08 million new students (1998) to 1.59 million (Zha, 2011).

Initial results were promising and in December 2003, China announced that it was promoting the largest higher education system in the world (Cheng, 2004). The fast expansion continued so until 2004, when the enrollment of higher education (considering all levels) reached its peak of 20 million students (twice in comparison to 1998). From then on, growth continued but more moderately. Regular higher education institutions also had rapid growth, from 1,022 (1998) to 2,263 (2008), an increase of 121.4% in 10 years. With reference (if included, in addition to regular higher education institutions, not formal private higher education institutions) to the year 2008, China reaches the surprising rate of 30 million students enrolled in higher education, and of these, 24.2% are in the 18–22 age group, which makes the Chinese system the largest in the world in absolute numbers (Zha, 2011).

Note that the participation rate increased about 15% in 10 years. To achieve this same growth, the United States took 30 years (1911 to 1941), Japan 23 years (1947 to 1970), and several other European countries around 25 years (Zha, 2011).

Several factors were decisive for this remarkable growth, and one of them was the incentive to initiate the operations of private higher education institutions, since the government thought that public education alone could never meet the great demand for higher education, beginning the process in the mid-1990s. Data from 2002 shows that over 60,000 private schools were opened in the country, among which 1,200 were in higher education (Cheng, 2004). However, not all were accredited by the Ministry of Education to issue degrees, and in 2008, the number of accredited private institutions was 638, including 322 independent colleges. These institutions accounted for 28% of all higher education institutions in China, with four million students enrolled. It is worth noting that these institutions mainly absorbed students from economically disadvantaged families, since students from more affluent families were enrolled in traditional Chinese universities (Zha, 2011).

Another important change that helped propel the mass education was the adoption of charging fees in public institutions, which became official in 1997, during which all higher education institutions began to collect their fees from students, which gradually increased depending on the year. This initiative helped to expand the system as the government could no longer claim that it had no financial capacity to support universities, with enrollment stimulated by social demand from that date.

In short, China's action to create a mass higher education system resulted in a fast enrollment expansion and also a large systemic differentiation of institution types: traditional universities, vocational colleges, private institutions, among many others. Despite the tendency of a qualitative decline in universities, the debate on quality guided the whole expansion process. According to Hayhoe & Zha (2004), still in 1993, the government announced a number of national initiatives aiming to give financial support to the 100 best universities in China, so that they could reach a "world class" status in the century that was to start. This project was named "Project 211."

With the celebration of the 100th anniversary of the best Chinese university, Peking University, another project was created in May 1998, known as "Project 985," in order to

support even more strongly a special group of nine universities (Hayhoe & Zha, 2010; Levin, 2010). In this context, Beijing was home to the largest number of colleges and universities, hosting several universities with an international reputation, including Peking University and Tsinghua University. At the end of 2013, Beijing had 89 regular higher education institutions, while Shanghai, for example, had 68 (OECD, 2016). This massive investment in these groups of urban universities caused some challenges in relation to the needs of local/rural universities and universities located in provinces far from the capital, which faced challenges of budget constraint for some actions. Costa & Zha (2020) show in their research that for some participants, the amount of public funding allocated by the government to universities through projects 211 and 985 is not sufficient to meet the real needs of the institutions, especially when comparing the amount invested in relation to the Chinese GDP, since universities have several expenses, such as infrastructure, personnel, assistance to students, among several other issues that should be equally considered, as they directly impact the access and quality of the education provided. For Houkai (2004), it becomes a challenge and a great need for central and provincial governments to balance interprovincial educational finances by transferring funds, given such a disparity.

Regarding private higher education institutions, holding many of the seats, the Chinese government also sought alternatives through funding to support economically disadvantaged students. Actions such as scholarships, grants, student loans, and study/work programs were implemented (Min, 2008).

On the website of the Chinese Ministry of Education, some of the programs for this inclusion can be found, such as the Green Passage, which aims to ensure that all students, especially those from poor families, have access and permanence in higher education, preventing students from leaving the course for financial difficulties. In this program, the Chinese government, universities and banks have created a special support system for needy students. Besides Green Passage, these students can apply for waivers of tuition fees, scholarships, subsidies, among others. The government has the responsibility to create programs, and universities and banks have the responsibility to provide the benefits (Cernet, 2020). These policies are also evident when analyzing an OECD report, which highlights that for higher education, a system of scholarships, grants and loans has been implemented, including national grants, national scholarships and national loans for students (OECD, 2016)

As a country of continental dimensions, China is now also investing in distance education as a way to geographically expand access and democratize education in the country, thereby promoting the intensive use of information technology in education. Since 1999, 68 regular institutions of higher learning and the Central Radio and Television University of China (CCRTVU) had a pilot project approved by the Ministry of Education aimed at promoting distance education. As a result, 140 programs in 10 disciplines were developed by the end of 2002, recruiting a total of 1,373,000 students. In order to cover the entire national territory, the 68 participating institutions have opened 2,027 educational institutions outside their respective geographic locations, providing academic knowledge via CCRTVU (Cernet, 2020).

To continue thriving in higher education, in July 2010, the Chinese government established the National Plan for Medium- and Long-Term Education Reform and Development (2010–2020), also known as "Plan 2020." This plan focused on the aspects of improvement and quality assurance and is intended to encourage creativity among students, also including a number of Chinese universities among universities recognized worldwide. This corroborates Altbach (2013a, b), who highlights the importance of research universities in developing countries. Finally, to achieve these results, the OECD (2016) explains that the Chinese Ministry of Education aims to plan and guide the research of higher education institutions and coordinate and guide such institutions to participate in the development of a national innovation system, based on projects and programs for the development of science and technology. In addition, it aims to guide the development of scientific and technological

innovation in higher education institutions by promoting the integration between production, teaching, and research.

Methodology

According to the aim of this article, I present herein an exploratory research; it is characterized as exploratory because it seeks to deepen the understanding of the aspects of a mass system based on the experience of China, to serve as a reference for Brazil, and in the perspectives of China and Brazil to achieve a universal system.

The research was drawn up to support the design provided for a qualitative research. The qualitative character is present due to the understanding and interpretation of the data collected through interviews with government public leaders and unstructured questionnaires to experts in higher education and student leaders.

I decided to only assess the educational system of Brazil and China. Among all government agencies available in the two selected countries, this research is delimited to investigate:

(1) Brazil: Ministry of Education and Culture (Ministério da Educação e Cultura, MEC), through the Development Directorate of the Network of Federal Higher Education Institutions (Diretoria de Desenvolvimento da Rede de Instituições Federais de Ensino Superior, DIFES), Directorate of Policy and Undergraduate Programs (Diretoria de Políticas e Programas de Graduação, DIPES) and Undersecretariat of Planning and Budget (Subsecretaria de Planejamento e Orçamento, SPO);

(2) China: Ministry of Education (MoE), through the National Center for Education Development Research (NCEDR), and the Research Center for International Comparative Education, this second at the National Institute of Education Sciences (NIES).

Among the government managers, the managers involved with public policies for the expansion of higher education were prioritized. Moreover, experts in higher education and leaders of student movements from both countries were also included to involve all actors in the system to ensure more comprehensiveness in the analysis.

For this research, data were collected through semi-structured interviews and questionnaires. The target audience comprised the key stakeholders in the system:

(1) Government managers: Professionals at the service of the government of the respective countries, responsible for public policies for expanding higher education;

(2) Experts in higher education: Professors and researchers whose main field of study is the issue of higher education in some of the countries studied;

(3) Student leaders: Leaders who are in charge of the student unions that represent the student audience of each of the countries researched.

In order to understand the perspectives of government managers of the respective countries regarding to mass and universal systems, interviews were conducted.

The list of interviewees is presented in Table 1:

In order to analyze the perception of higher education specialists and student leaders from both countries, unstructured questionnaires were used as a second data collection instrument. Questionnaires were developed through an online website dedicated exclusively to research, and the questions were adapted according to the circumstances and the results observed in each country.

The affiliation of the higher education experts who answered the questionnaire is shown in Table 2:

The list of leaders of student movements that responded to the questionnaires is presented in Table 3:

The scripts for the interviews and questionnaires given to all participants are related to the quality aspects in a mass system and to the claims for achieving a universal system.

Table 1.
Interviewees: government managers

Country	Denomination	Agency	Position
China	Interviewee 1	MOE/ NCEDR	General Director Deputy - National Center for Research on Educational Development
	Interviewee 2	MOE/ NCEDR	Researcher of the Ministry of Education of China
	Interviewee 3	MOE/NIES	Researcher of the Research Center for International Comparative Education
Brazil	Interviewee 4	DIFES/ MEC	Director
	Interviewee 5	DIFES/ MEC	Expansion General Coordinator
	Interviewee 6	DIPES/ MEC	Director
	Interviewee 7	SPO/MEC	Secretary
	Interviewee 8	SPO/MEC	Economist

Table 2.
Respondents: higher education experts

Representative country	Denomination	University	Faculty
China	Respondent 1	York University	Education
	Respondent 2	University of Tampere	Business School
	Respondent 3	East China Normal University	Sciences Education School
	Respondent 4	University of Toronto	Ontario Institute for Studies in Education (OISE)
	Respondent 5	East China Normal University	Institute of Higher Education
	Respondent 6	Beijing Normal University	Education University
	Respondent 7	Peking University	Education School
	Respondent 8	Tianjin University	Education School
Brazil	Respondent 9	Institute for Labour and Society Studies – IETS	N/A
	Respondent 10	State University of Campinas (Unicamp)	Education University
	Respondent 11	University of São Paulo – USP	Philosophy, Sciences, and Letters
	Respondent 12	Federal University of Goiás – UFG	Education University
	Respondent 13	Federal University of South Border – UFFS	College Campus Education: Erechim
	Respondent 14	Federal University of Espirito Santo – UFES	Education University
	Respondent 15	State University of Santa Catarina – UDESC	Business Administration

Considering the objective of the research, which is to understand the aspects for a mass and universal higher education system, the categories of analysis aimed to elucidate this questioning, following the assertion of Clark *et al.* (2009), who argue that nations often try to stop being an elite system, moving towards a mass system, to finally become a universal system.

For the qualitative treatment, the data collected through unstructured questionnaires and semi-structured interviews were treated using the content analysis technique as a reference (Bardin, 2009). To perform the analysis, the *MAXQDA 10* software was used.

The quality aspects in a mass system and the perspectives of China to achieve a universal system

According to government managers, migrating to a mass system generates an inevitable impact on quality, since the structure undergoes profound changes from a larger number of students per professor to the infrastructure that needs to be adequate. They also stated that the faster the expansion of the system takes place, the greater the challenges because it takes

Representative country	Denomination	University	Position
China	Respondent 16	Academic and Scientific Department in the Postgraduate Association	Member
Brazil	Respondent 17	National Union of Students - UNE	Executive Director of Public Universities
	Respondent 18	Union of Youth and Students in Brazil - UJE	President
	Respondent 19	Central Directory of Students UFJF	General Coordinator

Table 3.
Respondents: student leaders

Country	Category	Question	Purpose
Brazil	Quality in a mass system (Trow, 2006)	Do you believe that a system of mass higher education can influence quality?	Understand the strengths and weaknesses of investing in a mass higher education system
	Perspectives for a universal system (Trow, 2006)	With the premise of Goal 12 of the new PNE (2011–2020): "Raising the gross enrollment rate in higher education to 50% and the net rate to 33% of the population aged 18 to 24, ensuring the quality of the offer," do you believe that Brazil aims to reach the maturity level "universal system" in the coming decades? Why?	Understand the respondents/ "interviewees" vision regarding the future of the expansion of higher education in Brazil
China	Quality in a mass system (Trow, 2006)	Do you believe that a mass higher education system can influence quality?	Understand the strengths and weaknesses of investing in a mass higher education system
	Perspectives for a universal system (Trow, 2006)	China aims to try to achieve a level of development: "universal-system." Why?	To understand the views of respondents in relation to the education system of the country

Table 4.
Categories of analysis

time to make the adjustments. The leaders show that after the expansion of the system, the concern for quality is fundamental, something that the Chinese government now operates with more emphasis.

For Interviewee 1, when there is a migration from an elite higher education system to a mass higher education system, the quality of the system will be affected because the system will receive different students.

> It is not realistic to expect great quality from higher education in a mass higher education system, as it would be in an elite system (INTERVIEWEE 1).

One way to mitigate this impact is to invest in institutions seeking to improve training quality. The interviewee states that this is why China is investing heavily in the local and provincial institutions. He exemplifies by citing the 211 and 985 projects, which are designed to improve the quality of a significant group of institutions.

The same assertion is supported by the Interviewee 2, who believes that increasing access should be accompanied by the quality of the enlargement, although it is a big challenge.

For Interviewee 3, the quality is compromised due to a number of factors that directly impact the system, especially the large increase in the number of students per professor.

> I think there is no improvement in the quality of higher education, because the structure in many cases cannot keep up with growth. You start to have many students and not always a sufficient number of professors for higher education quality. The dedication to the students turns out to be lower than before (INTERVIEWEE 3).

In any case, government managers defend the importance of the massification of higher education and believe that China has the right to seek this stage; however, the way and the speed with which the process has been conducted has resulted in several challenges for this sector. The interviewee believes that if an advance to the mass system is natural, it will not influence the quality much, different from when there is strong government intervention.

For government managers, China has the clear vision to establish a universal system for their higher education due to the numerous benefits that come with this level of education.

Regarding the migration to a mass system, experts in higher education have an antagonistic view, with a slight inclination to the true mass education impact on quality, since the experience ends up being different.

For Respondent 4, quality is definitely affected, especially with a sudden influx of large numbers of students and inadequate preparation of the faculty. This statement is also supported by Respondent 3, especially in the educational possibilities from a new stage in the system.

Respondents 5 and 7 also believe there is a negative impact on quality variable, especially if growth is sustained by investment and management reform.

Advocating a different line of thought, Respondent 1 argues that the variable quality needs to be redefined in the context of mass higher education and universal higher education.

Since, for Respondent 8, China ends up having two systems (elite and mass) simultaneously, mass higher education often takes place in provincial universities and elite higher education occurs in research universities. The challenge is to try to multiply the results of these institutions to others in the system.

However, experts in higher education unanimously believe that the next step for China is to become a universal system, because it is a principle basis for the strategies adopted by the country.

> China realized that it could not depend forever on low basic manufacturing -wages, but needed to move up the value chain in its economic development and therefore needed an increasingly well-prepared labor force (RESPONDENT 4).

The student leadership presents a different perspective on the possible quality loss in a mass system: quality loss may occur; however, it is necessary to increase the volume of graduates. For this reason, it considers the role of research universities because they can maintain the quality of an elite system, forming a more specialized labor work, but act in a mass system, which is represented mostly by local and provincial universities. The leadership also considered the role of the elite system important.

> Yes, in my opinion, the elite system is required for a country, especially for research and innovation. On the other hand, the mass higher education has its advantage, as it can help improve the population's education level leading them in greater numbers to the higher level (RESPONDENT 16).

The student leadership hopes to see higher education in China achieve a universal system in the near future due to the indexes achieved in such a short time. Based on the principle, reaching this stage would be a natural system evolution.

The quality aspects in a mass system and the perspectives of Brazil to achieve a universal system

Government managers believe that there will be no impact on a mass system if financial investments accompany such developments. Interviewed 8 advocates the need for massive investments so that quality is not truly compromised.

For Interviewee 6, as communicability is improving in the world, the mass phenomenon will surprise everyone who questions its lack of quality. The interviewee reinforces that today, considering the gross rate, it can be said that Brazil is already in a mass system. The problem is that in the Brazilian system, there are 600,000 students over the age of 40, and half of all students enrolled regularly are older than 24 years (Trow, 2006).

Having as premise on Target 12 of the new National Education Plan (*Plano Nacional da Educação,* PNE) 2014–2024: "To raise the gross enrollment rate in higher education to 50% and the net rate to 33% of the population aged 18 to 24, ensuring the supply quality" it was also sought to investigate with the participants if they believe that Brazil aims to reach the "universal system" level of maturity in the coming decades.

For Interviewee 6, Brazil needs to work towards the universal system. The same is defended by Interviewee 4, which is based on PNE goals to say that there is already a route.

> When you speak of universal, universalization percentage, we have as a goal to reach the end of the ten-year plan with 33% of the right age enrollment and 50% of the gross rate. It is the sign of a path (INTERVIEWEE 4).

However, Interviewee 6 recognizes that the country has some serious problems to meet this goal.

> For now, we have to work to have a consolidated mass system with a real flow. Not a crazy flow that we have, which is what I call accumulated fat. It is accumulated by the historical elitism (INTERVIEWEE 6).

Interviewee 6 trusts that after consolidating the mass system, with the regulated flow, Brazil will naturally migrate to the universal system.

Corroborating with government managers, experts believe that there may be influence if there is the necessary investment. Moreover, analyzing the specific scenario of Brazil, experts consider basic education as the major bottleneck, because as most students are not properly capable at this level of education, when they reach higher education they are not prepared, which leads to an inevitable loss in quality because higher education ends up having a dubious role: basic and higher education.

For Respondent 12, the Brazilian system proposes measures of a mass system, but can still be considered an elite system.

> The current Brazilian case is an elite system with policies directed to a mass system (PNE goes in this direction by proposing gross enrollment rate of 50% and net of 33%) (RESPONDENT 12).

In any case, the expert believes that this process is crucial to the democratization of access and certainly will require a broader view of quality. Inevitably, there will be a change in the current design, which is necessary.

On the other hand, Respondent 13 believes that quality for few is elitism. Respondent 15 considers that popularizing higher education does not mean lower quality.

> The massification of higher education in terms of system quality is a reflection of the quality of basic education. So, if we have a good basic training, perhaps this will be reflected in higher education (RESPONDENT 15).

Experts in higher education believe that seeking a universal system is an inevitable path for Brazil; however, achieving this rate will not be easy due to a number of structural and economic problems faced by all levels of education in the country.

Respondent 11 believes that Brazil will seek this path, but warns that this expansion can be not only to enable the higher education "as a business". The expert believes that the already approved PNE is an important path that needs to leave the paper, something that has not happened in the last PNE, as Respondent 10 says.

Respondent 12 believes that the next step will be aimed to universalize this level of education, which should occur in the next PNE (2024/2034). However, none of this will be possible without the necessary investment.

At the end, Respondent 15 also argues that before thinking of a universal higher education, the indicators of basic education must improve, mainly the qualitative ones.

> The goal seems clear. I do not know how far we will get. Now, "ensuring the quality of supply" safely, I say no: quality higher education with poor basic education are elements that do not match together (RESPONDENT 15).

The student leaders have different opinions. While two respondents believe there may be rather an influence on the quality, depending on the way it reaches the mass, one respondent believes that there is no apparent influence.

According to Respondent 17, even if there is influence, it is foolhardy to believe that it is a rule.

> There may be impact, yes, but not necessarily an antagonism in both positions (RESPONDENT 17).

Respondent 18 goes further in saying that there should be no influence on the quality, but it unfortunately happens. On the other hand, Respondent 19 trusts that is no influence in mass and quality.

Student leaders expressed confidence that one day Brazil will reach a universal system. However, they state that the challenges are numerous, and quality will have to be part of the equation, which cannot be restricted only to increasing the number of seats.

Finally, Respondent 19 also believes that Brazil will achieve the universal system and warns that the struggle of the student movement will be towards this goal.

Conclusions

According to the definition of Trow (2006), the Brazilian higher education system is still an elite system that is heading to become a mass system due to its current net enrollment rate. Therefore, the path for the Brazilian higher education is to migrate to a mass system and ultimately achieve a universal system. On the other hand, the other system investigated has already achieved this path, as China has achieved a mass system and is in search of a universal system. For this reason, it was verified among the participants of this nation the possible impacts of achieving a mass higher education system, considering that is the next

step for Brazil. However, it is important to note that China's economic growth has been greater and more sustainable than that of Brazil in recent decades, and this has helped to increase investments and results in the expansion of higher education in the country (Costa & Zha, 2020).

The Chinese participants, who have faced this change in status recently, confirmed there is an impact on quality because there will be an inevitable change in experience. However, this modification does not depose against the mass system. A nation needs to go through it and be structured properly so that it can reach the desired universal system. This result is in line with OECD reports, which show a concern by the Chinese government to expand access to higher education to meet the demand for skilled labor in the country (OECD, 2016, 2019, 2020).

The same question was made to Brazilian participants to understand what the actors' system prospects are for this next step to be achieved. The views corroborate that there can be an impact if the investment does not follow the expansion. This result is in line with the research by Costa *et al.* (2013), which shows the need to expand investments in higher education to provide an adequate expansion. It also reinforces the OECD report (2018), which presents Brazil's challenges in achieving the goals for higher education in the PNE 2014–2024. Investment expansion is necessary to become a mass system and, in the future, a universal system.

Looking ahead, it was also questioned to the participants about the universal system status. According to Trow (2006), China and Brazil are still in pursuit of this goal.

With participants from China, it was sought to understand whether the next step is to achieve a universal system, or if the country is already satisfied with having reached a mass system. Unanimously, the participants demonstrated that this is the goal of Chinese higher education for the next decades. The justification for this is due to the numerous advantages observed in expanding this level of education in the country. This result is also in line with the perspectives of the Ministry of Education of China, which has higher education as an important tool for the development of the country (OECD, 2016).

The same was asked to Brazilian participants, who believed that seeking a universal system is an inevitable path for the nation, something that is reflected in some goals of the PNE. Still, they acknowledge that the challenges are numerous, due to a number of structural and economic problems faced by all levels of education in the country. This result reinforces the data presented by the OECD (2019), which demonstrated that the indicators of access to higher education in Brazil are still below its neighbors Chile and Argentina, and that the expansion that currently occurs through private institutions (75% of seats) in a country of great social inequality can be a great challenge to become a universal system.

It can be concluded from this analysis that elite system, mass system, and finally, universal system represent a natural path for a nation that aims at development. The aspiration demonstrated by the Brazilian participants to achieve a universal system, without having yet reached the mass system (Trow, 2006), shows that the country knows that it is necessary to increase financial investment in this level of education, which corroborates with the recommendations of this research.

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Corresponding author
Danilo de Melo Costa can be contacted at: danilomct@gmail.com