Improving Public Secondary Education in Brazil: Opening doors and breaking the cycle

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Abstract:

While victories have been claimed at the primary and tertiary levels in recent years by successive governments, as a result of their shift to social issues, Brazilian public high schools are still far from receiving adequate policy attention and funding. As a result of the poor quality and quantity of public secondary education, the bulk of the population (of lower socio-economic status) is underrepresented at the university level.

This study examines -both on theoretical and empirical grounds- whether the education policies implemented during the administration of Luiz Inácio "Lula"da Silva (2003-2010) were founded in the needs of students and appropriate for the obstacles at hand. It discusses the literature on factors that affect educational outcomes. It then presents findings from the case study conducted in the state of Goiás. Lastly, based on the quantitative and qualitative information collected, policy recommendations are put forth, keeping in mind the national goals of moving forward as a nation through providing its citizens the necessary tools to thrive.

In addition to the potential to improve the national economy, enhancing the quality of the education offered in public high schools could serve to improve the ability of students of lower socio-economic status in being admitted into universities, increasing their life-chances and the possibility of higher incomes – ultimately, breaking the intergenerational cycle of poverty and moving Brazil forward in the face of the knowledge economy.

Part I. Introducing the Study

In recent years, the world's eyes have turned to Brazil as a result of its goal to join the more powerful actors in the economic and political arenas, through its quick economic growth and potential for continually increasing prosperity and development. Despite this upswing, as one of the most unequal developing countries, Brazil still has several sectors that require attention and refurbishing. The education sector is indisputably one of them. Much like other developing countries -and many developed countries as well- the Brazilian public education system continues to suffer from deficiencies in capacity and quality. While some sectors in the country become increasingly prosperous, skyrocketing on comparative scales, on the educational front Brazil is well below global standards. Brazilian PISA scores are amongst the lowest and the discrepancies in age-grade settings are amongst the highest (Inep, 2009). The repercussions of these inadequacies have for some time negatively affected the opportunities available to both the citizens of Brazil as well as to the nation as a whole. With a population close to reaching two hundred million, the difficulties to 'move forward' are not a result of lack of talent and skill amongst its citizens. Instead, the challenges largely lie in the nation's (in)ability to tap into the potential human capital that rests within the Brazilian population.

This study dives into the issues surrounding increasing [public] university enrolment rates in Brazil during and after the presidency of Luiz Inácio 'Lula'da Silva (2003-2010). It assesses the education policies and strategies during the Lula administration that targeted secondary (high school) and tertiary (university) education, particularly those that directly and indirectly sought to increase public school students' access to federal universities[1], aiding students of lower socio-economic status (SES). This paper argues that one of the primary inconsistencies that hinder those of lower SES in educational terms is the significant difference between the quality of the education being offered in public and private schools; the latter being of considerably higher quality given the rates of students from them being admitted into higher education. In addition to this public/private divide, the average income level of municipalities also impacts the quality of the education provided (at both public *and* private high schools), given that the higher the average income, the higher the quality of the education offered. In essence, it argues that although the socio-economic condition of individuals can and does affect educational outcomes, the Brazilian government should aim to bypass the relevance of SES by decreasing the substantial gap in quality that exists, when comparing the education offered in public and private high schools throughout the country. This can be done through higher investments (state and federal) in the public secondary education sector as well as improved monitoring to avoid disparities in investment capacity (i.e. horizontal imbalances) and/or the misuse of funds. Moreover, this study argues that an essential component to improvement consists of

increasing the communication between the representatives of the secondary and tertiary levels to ensure cohesion within and between the Brazilian education system, a factor only briefly discussed in the literature reviewed.

Due to the complexity of the topic, this is a two-fold study: the first portion consists of an analysis of the theoretical and empirical literature on access to higher education and the factors that affect admission. The succeeding segment is based on field research, where a qualitative study was conducted by means of surveys and interviews with key stakeholders in the secondary/tertiary education sector (i.e. students, teachers/administrators and political figures) in the state of Goiás, a state illustrative of the country average, both in educational and economic terms (i.e. based on students' test scores compared to the national average and on household income levels). In other words, the 'weight' of the variables presented in the literature regarding access to/aptitude for higher education are ultimately tested on the ground and reviewed. In addition to spotlighting issues that were confirmed and refuted during the field research, such as the relevance of parental income and education, findings that expose the flaws and achievements of Lula's policies will be discussed in full, such as the need to provide students with information sessions on post-high school options and the improvements in infrastructure that did occur. This analysis is followed by policy suggestions and a discussion of follow-up research that combined, could help the Brazilian government in the long-standing battle to overcome the strains of socio-economic disparity, moving forward in terms of development on a micro and macro scale.

With a better understanding of what affects educational outcomes and university access, one can potentially determine whether the policies put in place during the previous government in fact tackled the appropriate issues. This will spotlight government procedures but will also serve to provide insight on what has impeded the rates of public school students in higher education from increasing in all of the regions in Brazil, revealed to be a conglomeration of factors some of which are difficult to tackle while others less so. As the research reveals the most significant factors that affect education levels and capacity to be admitted into federal universities *were* included in the policies (i.e. policy outputs) during the Lula government, this aims to explain how the chain of effect was broken in the implementation stage, with under-funding being a key element. Although not all of the public schools and universities in Brazil were assessed, the goal was to retrieve information on a representative sample to allow the results to be internally generalized. Furthermore, since the problems faced in Brazil reflect the symptoms of many Latin American countries (LAC) and other nations, the lessons learned here can also be informative beyond the Brazilian case.

Background/Context

Fernando Henrique Cardoso's terms as president of the Federative Republic of Brazil (1995 – December 2002) made significant steps towards improving the education system. This was mainly due to the implementation, in 1996, of the Law of Directives and Bases of National Education (LDB). The LDB clarified the roles of the municipal, state, and federal education systems[2], called for the democratisation of school governance, aiming to provide schools with more autonomy by decentralizing funding and decisions, making curricula more flexible and encouraging higher teacher qualifications (OECD, 2010). Yet, it was the presidency of Luiz Inácio "Lula" da Silva (2003-2010) that truly represented a historical break from previous governments with regards to social issues, giving them significantly more attention with a myriad of new social policies. The latter raised total resources for education substantially from 4% of GDP in 2000 to 5.2% of GDP by 2009 and distributed resources more equitably than in the past (Inep, 2010). Projects such as the increasingly popular conditional cash transfers that made attending school a requisite to participate (chiefly *Bolsa Escola* and *Bolsa Familia*) helped shift over 40 million people out of the lowest income level[3] (OECD, 2010). Successes have been witnessed in primary education where enrolment increased and national test scores improved (Inep, 2010). Moreover, Lula's government invested in improving the agencies and methods of monitoring and evaluating Brazilian education. Indicators were better developed to measure the capacity of educational services, their efficiency, quality and expenditure; the dissemination of data to the general public, media and policy makers improved and an integrated education information system was created (Inep, 2011). Said information systems and the other policies were meant to pave the way for better policies and better results.

In terms of the secondary and tertiary levels of education, these too were 'tended to' in terms of policies. In 2003, the newly elected president released the document titled A School the Size of Brazil (*Uma Escola do Tamanho do Brasil*) where his government drew a picture of the state of education in Brazil upon their entry and made a number of promises in terms of what would be addressed during his presidency. The Lula government vowed to improve the overall quality of public education as well as to facilitate the transition for public school students from one level of education to the next (Uma Escola do Tamanho do Brasil, 2003). It voiced its understanding of the importance of providing people with quality education and encouraging them to seek higher levels of instruction, as the proper method of increasing the opportunities for growth of its citizens and the country. Several issues were highlighted as priorities including: the gradual universalization of secondary studies with the guarantee of democratic and quality education, the provision of additional infrastructure (including buildings, laboratories, technological resources, etc.), the formation of competent and updated education professionals (in adequate numbers), an enhancement in the

textbooks used, and the development of permanent mechanisms for the participation of students and the community to engage in discussions for the better management and evaluation of said schools (*Escola do Tamanho do Brasil*, 2003). Policies put in place at the tertiary education level[4] sought to increase university enrolment rates of public school students directly, through an emphasis on social inclusion and new entry requirements and procedures. Despite all these promises (see Annex 2), however, many problems persist and the rates of public school students being admitted into Brazilian universities is low in comparison to their private school counterparts. In particular, while only 13.7% of students (from higher income homes) attend private high schools, they make up 52.9% of the federal university population (MEC, 2010). Furthermore, given that in 2010, 81% of high schools were public institutions and only 19% were private (figure 1; MEC, 2010), this study seeks to explore why it is that students who attend public high schools and are in most cases of lower-income families are the clear majority, yet statistics suggest that they are not represented in public higher education in similar numbers. This deduction is made based on the assessment of the literature on the factors that affect educational outcomes as well as the case study, both of which are reviewed in more depth in the following sections.

Part II. Relevant Findings in Literature

To assess the efficiency and effectiveness of the education policies employed, it is important to first understand what the literature on the topic suggests are elements that can affect one's educational outcomes[5]. Such understanding allows one to better determine which [if any] of the factors affecting a person's educational outcome is within the government's realm of responsibility to address. As such, the literature reviewed consists of theoretical and empirical insight on what influences students' pursuit of higher education. Policies that address the *real* needs of the people and educational institutions are much more likely to be effective if they are tending to the structural issues at hand, as opposed to merely brushing the surface of the problem.

Three main paradigms stand out in the debate on the key causal factors/obstacles contributing to educational levels and university access. The first (1) revolves around socio-economic status and other personal determinants; the second (2) the quality and attributes of secondary education and the third (3) reviews the effects of university entry policies and other traits of tertiary education. Evidently, increases and decreases in enrolment are correlated with multiple influences (i.e. enrolment trends do not occur in isolation) and as a result the three paradigms listed are often intertwined. The significant interconnectedness of three main factors is presented in this section. The factors presented and the association between these elements substantiate the choice of variables included in the field portion of this study; the literature justifies the importance of the variables and

in the next stage, through surveys and interviews, their *true* weight in students' decision and capacity to pursue higher education will be assessed.

Despite the growing importance and attention to the topic, the empirical studies on the impact of education policies on access to universities in Brazil are quite limited. The studies based on observation that are relevant to the research questions here posed revolve mainly around an analysis of the results available due to the innovative data collection methods now in place to monitor and evaluate the Brazilian education sector. The purpose of reviewing the existing works is to identify the areas that have been tackled by scholars, while also aspiring to spotlight the potential gaps and contradictions in these empirical studies, drawing attention to the overall strengths and weaknesses of the data sources used. The empirical literature review follows the same sequence as the theoretical portion, under the headings of the three paradigms: (1) the role of socio-economic status and other personal determinants, (2) the role and impact of secondary institutions, and (3) the characteristics of universities and university policies.

2. Key Causal Factors Related to University Access

2.1.1 Role of socio-economic status (SES) and other personal determinants

In an analysis of the variables that affect educational outcomes, many scholars agree that the factor that most significantly contributes to positive or negative results is one's socio-economic standing and background (França, 2010; Borges & Carnielli, 2005; Fitzgerald, 2004). According to a large portion of the literature, students that have difficulties entering post-secondary institutions are often from lower-income homes. Fitzgerald (2004) stated that: "only 22 percent of college-qualified, low-income high school graduates [in the United States] earn a bachelor's degree compared to 62 percent of their high-income peers" (p. 13) and there are several reasons for this. Family income and wealth play a tremendous role in the school options available to students for their high school years, as well as for higher education (Mazumder, 2003; Berkner & Chavez, 1997; Mora, 1997; Ludwig, 1986). However unfortunate this may be for large portions of society that are not wealthy, ultimately, the higher the income, the greater the options in quantity and quality of education.

Those who critique this social reality, like Pinto (2004) and Zeferino (2011), argue that the students entering university in Brazil are not necessarily the most capable, but in fact the most well-trained. While Pinto (2004) and Zeferino (2011) wrote in the context of Brazil, the discrepancies in opportunity they describe are evident in other countries as well.

The education level held by parents is important and closely linked to their income seeing that higher incomes are often the result of higher education. Students whose parents completed a post-secondary degree are more likely to seek out higher education due to parental influence. This influence can come in the form of pressure, or simply by motivating children who see/feel the

advantages of pursuing higher education based on the quality of life they and their parents' experience.

The opposite is also true according to José Ginés Mora (1997), a professor at the Institute of Education of the University of London, who claims in his paper on Spanish higher education that teens whose parents or main householders work in agriculture or non-skilled labour are likely to follow in their parents tracks and do not pursue higher education. When the parents have not attended university, the pressure on their children to attend is not as high as in higher-income homes (Giroux, 2004; Mora, 1997). Furthermore, households where the parents have not completed tertiary studies are likely to receive lower incomes. Often times lower income households require that teens take on employment during high-school and this in itself decreases the opportunities of interest and enrolment in universities (Fitzgerald, 2004). Lower family incomes have the reverse effect of those seen in higher income homes: the choice of schools for their children is limited given that most teens in this case attend public high schools. Moreover, inequalities in household income per capita also exert a significant influence in the age/grade setting (i.e. if one is in the appropriate grade for their age). In Brazil, among the poorest 20% of the population only 32% of teens between 14 and 17 were in high school; while in the richest 20%, almost 80% of adolescents were enrolled (IBGE, 2010). This reveals that interest and capacity to attend high school is in itself very difficult for some, making the option of higher education even less likely.

Students in lower-income homes (particularly in rural areas) are also said to not have access to computers and internet in comparison to their higher-income counterparts. This further decreases their opportunities of pursuing higher education and successful enrolment as essential research and analytical skills are not being developed (Borges & Carnielli, 2005).

The numerous factors in this segment, that have been underscored by scholars as relevant to one's educational outcomes – SES in general, the role of parental involvement, the role of parental income and education, the need and ability to take supplementary courses, the potential strains of lower income homes (i.e. teens having to take on a job during high school), and access to internet – were thus included in the surveys in order to gain a better understanding of the extent to which students/teachers believe these factors are significant in the students' decision and ability to pursue higher education.

Empirical Review

Maria Helena Guimarães de Castro (2009)[6], in her article on evaluation systems, calls attention to the disadvantages students from lower income families experience in terms of educational attainment; an issue highly visible in many of the indexes that now track progress [or lack thereof] in the education sector. In her breakdown of the National Secondary Studies Exam

(ENEM – *Exame Nacional do Ensino Medio)*, de Castro (2009) discusses how the focus on socio-economic status when comparing public to private schools conjures an enormous amount of discomfort for students, parents and teachers that know and feel the effects of low SES in the quantity and quality of education provided in public schools. This in turn leads students and teachers to be discouraged and unmotivated to improve conditions and/or excel because the odds are against them regardless (de Castro, 2009; Domingues et. al., 2000). Instead of creating a positive agenda that aims to evade the effects of SES in education through improvements, ENEM results have only served to reinforce the disturbing and debilitating debate on SES that in itself does not contribute to improvements in the quality of education (de Castro, 2009). The overall approach to education in Brazil is critiqued[7] as many key issues hide behind the extensive and continuing affliction with SES (de Castro, 2009). Many of her findings substantiate the claims in the theoretical literature[8], yet the difficulty of taking that data and converting it into efficient and effective education policies is arguably the most pertinent point.

Other works have taken a different route. Instead of criticizing the arguably excessive presentation of SES figures in education indicators, some attempt to track the effects of SES, hoping to find results that suggest its role is decreasing and education is being 'de-elitecized' (RES, 2008). The Journal of Higher Education in Brazil (*Revista do Ensino Superior*), presented a study in 2008 that included statistics from the National Institute of Educational Studies and Research Anísio Teixiera (Inep) and confirmed the fact that the richest and consequently most educated young adults *continue* to be the ones attending federal public universities. Michelotto et. al. (2006) also confirm through the use of Inep statistics that Brazilian society continues to cultivate the notion that university is a privilege of the higher classes whose children are predestined to attend, as a result of their families education and income. These figures substantiate the variables discussed in the theoretical review, indicating that in fact students whose parents have higher levels of education are more likely to attend university themselves. As will be discussed in the case study, the field research results suggest that although the national statistics reveal this to be the case, when the students at public schools are asked, they do not seem to associate their parents education to their pursuit (or not) of higher education.

Another study conducted that is relevant to the debate on whether Lula's policies had grounding in the reality of students and teachers is Whitaker and Fiamengue's (2001) *Secondary Education: Responsibility of the State or the Enterprise?* It compares vertically and horizontally within and between different courses respectively to determine whether in fact attending a private high school increases ones chances of being accepted into university (Whitaker & Fiamengue, 2001). Although this study was conducted prior to Lula's terms as president, the findings are relevant as

they partially coincide with the findings in the field research conducted thus far, which moves away from the notion that the *only* factor at play is the public versus private divide. They reinforce the importance of one of the variables discussed in the literature review: the need for supplementary courses, i.e *cursinhos*. According to these authors, it is not the type of high school that one attends that increases or decreases access to university, the determining factor is whether students attend supplementary courses (*cursinhos*) or not (Whitaker & Fiamengue, 2001; Franco, 2008). The authors believe the impact of secondary schooling is in itself nullified as a result of these variations and declare that what *really* makes a difference is whether students attend *cursinhos* (Whitaker & Fiamengue, 2001). Although schools that have the capacity to invest in teachers (training, wages, etc.) and infrastructure is often private, Whitaker and Fiamengue (2001) stress that this is not always the case. There are public high schools that are managed with a focus on progress and are highly equipped to tend to student needs, and there are also a number of private schools that fall well below the unspoken expectations for the kind of enterprise that it is (Whitaker & Fiamengue, 2001). This article suggests that the quality of education advertised in and by private high schools is not always present, yet people continue to believe that private high schools will prepare students for university in a more effective manner than public high schools (Whitaker & Fiamengue, 2001). Their study is quite pertinent to the questions posed here as it not only suggests that private schools are not necessarily 'better', but it also sheds light on a potential contradiction that exists within the empirical evidence (as per the FONAPRACE's findings examined above that stresses private schools *are* more equipped). In other words, the value given to *cursinhos* and the wide spectrum of quality across private [and public] high schools quality of private schools was explored in more depth in the field study to confirm or refute these findings.

Considerations

The summary of the findings in the literature is displayed in Table 1 (annex). A few of the Brazilian scholars reviewed stated socio-economic factors decisively contribute to educational prospects and life chances (Libâneo, 2008; Lopes et al., 2007; Borges & Carnielli, 2005); the recommendations are more geared towards addressing the precarious state of public high schools, both in quantity and quality of the infrastructure and education provided[9]. Again, the authors go as far as spotlighting the problems and recommending solutions in that context, but the practicality of implementing these changes is not addressed. Although not explicitly, most of the authors acknowledge that while socio-economic factors are perhaps the most determinant, there are also other issues at play, including the role and impact of the quality of secondary institutions.

2.1.2 Role and Impact of Secondary Institutions

The Program for International Student Assessment (PISA) revealed in 2009 that student performance in Brazil's public schools is quite inferior to its private counterpart. Testing knowledge in math, reading and sciences, the average obtained by students in private schools was 502 points, while in the public sector it was an average of 387 points (PISA-IBGE, 2010). Closely linked to socio-economic factors, the quality of education provided to students at the high school level also greatly influences whether students will choose to pursue higher education.

As mentioned, students of higher SES can afford to attend private high schools while lower income students are often limited to public schools. In Brazil, 86.4% (nearly 7 million) of the students enrolled in high school are currently attending public schools, while 13.6% are in private systems (IBGE, 2010). The data reviewed in Brazilian education indicators[10] substantiate the claim made in the literature: the higher the income, the higher the likelihood of attending a private high school. Said indicators also spotlight how the students attending private high schools are the ones being admitted to federal (i.e. public) universities.

Private secondary studies institutions use the high tuition returns to invest in infrastructure, i.e. they have the funds to improve facilities, services, and installations needed for optimum execution of the supply side of education (França, 2010; Leite, 2010; Borges & Carnielli, 2005). This in turn leads to higher results in student performance as the schools are better equipped with supplies, teachers are well-trained in the areas they teach, and the students have more guidance and support available to them. The conditions in public schools are often – although not always- unsatisfactory in comparison (Leite, 2010; Libâneo, 2008; Fernandes Jr., 2004). The substandard infrastructure that exists in many public high schools leads to a less than desirable quality in the education provided. For example, according to Anderson (2008), the lack of teaching materials is negatively correlated to student achievement test scores; high school teachers in Brazil have a high turnover rate as a result of low wages, poor training and overall frustration with the system (Libâneo, 2008; Lopes et. al, 2007). Inadequate management at the school level also leads to low numbers of administrative and faculty members due to inefficient use of funds (in some cases a result of corruption) and less than supportive working environments. Little to no training at the administrative level is also a setback (Anderson, 2008; Libâneo, 2008; Hill, 2005). These factors were all included in the survey/interview portion of this study in order to confirm or refute the correlation *and* significance of these factors in relation to the students' interest and capacity to pursue higher education. Discussed in more depth in the upcoming section, the findings suggest that private schools in low-income areas – while more equipped than their public counterparts- are still below the

standards of quality necessary to ensure that students' are being properly prepared for higher education.

Ultimately, students of lower SES and others that attend public secondary education institutions are not receiving the sufficient, let alone the first-rate education that is needed to equip students with the tools that allow them to have a prosperous future. In order to address these inadequacies, scholars stress the importance of investing in infrastructure (Leite, 2010; Libâneo, 2008; Anderson, 2008; Hill, 2005; Fernandes Jr., 2004, Berkner & Chavez, 1997). This requires government funding (or local fundraisers) for additional classrooms, a lower teacher-student ratio, more teacher training and higher wages for teachers, and more counsellors, amongst other things. Anderson (2008), Hill (2005) and Fernandes Jr. (2004) emphasize the importance of improving certain subject areas: students are not developing suitable literacy and writing skills and knowledge of math at the high school level, areas that are crucial for entry to university. Plank and Jordan (2001) explain that their recommendations to provide better guidance to students relating to their post-secondary options are neither new nor costly and should be used more frequently and effectively at the high school level.

The literature proposes that the effects of SES are further exacerbated as a result of the quality [or lack thereof] of the education offered at the high school level. As such, to reduce the impact of SES without suggesting impractical solutions such as income redistribution, policies that confront the true issues such as improving infrastructure and teacher training in public schools must be put in place. In reality, the Lula government did vow to address these issues, but the effectiveness of the manner in which they have done so is still in question.

Empirical Review

The variables introduced in the theoretical literature review are clearly presented in Lula's document A School the Size of Brazil (2003) as government priorities for this level of education during Lula's presidency. Consequently, the empirical studies on the role and impact of secondary institutions revolve mainly around the features presented in the document *Escola do Tamanho do Brasil* (2003) directly and indirectly, determining whether or not promises were kept.

Although some scholars (deCarvalho, 2066; Cueto, 2005) suggest congruence between what theories propose and what policy makers are paying attention to, it does not imply that the Lula government was the first to recognize these variables as important to address. In 2000, Domingues et. al. pointed out similar factors as important (i.e teacher training/qualification, etc.) through the use statistics available pre-Lula. Moreover, in 2010, Luana Bonone conducted semi-structured interviews with a number of different representatives in education including: former ministers of education, student body leaders and University professors amongst others and, despite promises that

policymakers had their eyes on the *real* problems, the factors regarding the lack of quality in secondary education mentioned in the literature and statistics, remain unchanged for the most part.

Again, empirical studies appear to correspond to the needs described in the theoretical review and the conformity goes beyond academia, with citizens and policy makers alike revealing similar attitudes towards the topic. Still, the availability of empirical studies to substantiate the claims made is limited. While there is a sizeable amount of literature and studies on SES, that is not really the focus of Lula's reforms. The need for improvement in high schools has existed for years yet little has been done in the sector and consequently, not much (other than to reiterate the same problems continue) has been written. More was expected on the variation in terms of investments at the state level and how that affects efforts to improve secondary education. In addition, only few emphasize the need for a better understanding and policies regarding the quality of primary and secondary education as a *means* of accessing higher education. The factors presented in this section – the value of infrastructure, teacher training, supportive work environments, higher wages for teachers, the public vs. private divide, and others were also included in the surveys as a means of unveiling the importance of these elements in the eyes of the key stakeholders. A summary of the factors here discussed is in Table 2 (annex).

It is important to note that addressing the weaknesses apparent in high schools in itself would not necessarily guarantee the enrolment of more students in higher education. In addition to the socio-economic factors at play, and the role and impact of high schools on student achievement and outcomes, one must also consider the barriers university entry requirements place on students' attempts to enrol and conversely, the policies put in place to facilitate entry. Thus, the following paradigm spotlights the characteristics of universities and university policies and their role in facilitating the transition from level of education to the next and increasing access to higher education.

2.1.3 Characteristics of Universities and University Policies

One cannot address the demand for higher education while ignoring supply factors (Giroux, 2004). It is therefore valuable to the debate on increasing [public school students'] university enrolment rates to also review the characteristics of universities. Most universities exhibit unequal representation of social classes, with a considerably elitist student body (Zeferino, 2011; Leite, 2010; Tessler, 2007; Lisboa, 2004; Fitzgerald, 2004). This exclusive nature of higher education has foundations in a historical tendency evident throughout the world (Fernandes Jr., 2004). In earlier times a university education was only suitable for, and available to, the wealthy (Fernandes Jr., 2004). More recently, many institutions of higher education have sought to incorporate inclusion as a social principle (Libâneo, 2008 ; Pinto, 2004) in order to have different groups represented and also

to make room for lower-income students that wish to gain access to more opportunities. Yet, the arguably overdue but necessary aspiration to be more inclusive cannot occur overnight, nor can it happen without additional investments. In relation to the questions at hand, the debate on social inclusion is relevant because it is one of the State government's methods (in conjunction with Brazilian universities) to reduce the impact of SES; a means of doing so without directly undertaking the poor secondary education factor. Whether this principle is the most adequate approach is still in question, with academics on both sides of the debate. Nevertheless, as it is a principle that influenced policy during the Lula administration, it is important to explore and discuss.

A variety of 'social' policies have been put in place in order to address the limited transition of high school students into universities, many of which specifically target lower-income students who suffered from poor education provision at the high school level. In Brazil, where tuition is not the main impediment, the level of difficulty of the entry exam is often what reduces the chances of students from lower incomes and lower educational backgrounds. To address this issue and the resulting lack of societal representativeness in Brazilian higher education, different methods/policies have been selected by different universities, including social quotas (Zeferino, 2011; Lopes et.al, 2007) and progressive entry exams taken while students are in high school (Tessler, 2007; Borges & Carnielli, 2005). Social quotas, where a certain percentage is added to the students' final test scores, is a new procedure that has been introduced in recent years[11]. Since they are so recent, the long term effects have not been seen. To allow students, who do not possess the knowledge to pass the entry exam without these social quotas, to be admitted into university can potentially have a negative impact on both the secondary and tertiary education sectors of Brazil. It can lead to a reduction in the quality of the education offered in universities in order to meet the needs of those coming in with limited knowledge in comparison to their high-income counterparts; and/or if the expectations of students [once admitted] remain the same, these social quotas will allow students to be admitted but will not help them to stay in the programs, as they will likely struggle and possibly be required to halt their post-secondary studies. Moreover, as public school students become more aware of the lower requirements for their admittance, these social quotas can discourage students from excelling in high school – further reducing morale amongst them. These methods have received criticism, particularly from those that believe they are mechanisms that attempt to circumvent the need for more substantial educational reform at the secondary level (Leite, 2010; Libâneo, 2008; Tessler, 2007; Fitzgerald, 2004). As such, the relevance of social quotas was also included in the survey portion of this study, to expose what students and teachers think about these quotas, and how relevant their existence has been in the students' decision to pursue [or not] higher education.

Another aspect of university admissions that has been critiqued by scholars is the fact that entry requirements for degrees of higher prestige that lead to higher incomes upon completion (i.e. law, medicine, business, etc.) are so exclusive that only students who reaped the advantages of quality education and a higher SES are qualified (Tessler, 2007; Borges & Carnielli, 2005; Mora, 1997). A simplistic manner of illustrating this phenomenon would be: only the children of doctors and lawyers can afford to go to (and have received the preparation for) medical or law school, thus perpetuating the cycle of social divide and limiting the opportunities available to those of lower income. While student aid may help the student pay for their education, the limited knowledge acquired during high school limits their options in terms of programs they are qualified for. Evidently, while education can contribute to social mobility, it can also contribute to the preservation of inequality. Ultimately, this issue must be addressed if the promise of potential income mobility for those that pursue higher education is to continue.

Universities' Current and Future Capacity

The significant impact of tuition, average wage levels, and average education levels have already spotlighted the difficulties lower income students face and the advantages higher income students embrace. Yet, one must also consider how universities will accommodate the higher numbers of students if the goal of increasing enrolment rates is to be achieved (given the other factors or a portion of them are addressed with effective policies). In order to receive larger number of students, institutional capacity must be augmented. This includes raising the number of vacancies for students, the amount of professors, classrooms and availability of courses (i.e. increase number of actual classes) as well as other traits (Lopes et. al, 2007; Tessler, 2007; Giroux, 2004). A study conducted at the Federal University of Minas Gerais in Brazil indicated that increasing the number of courses available at night had a significantly positive effect on the number of public high school students interested in attending the university (Lopes et. al, 2007).

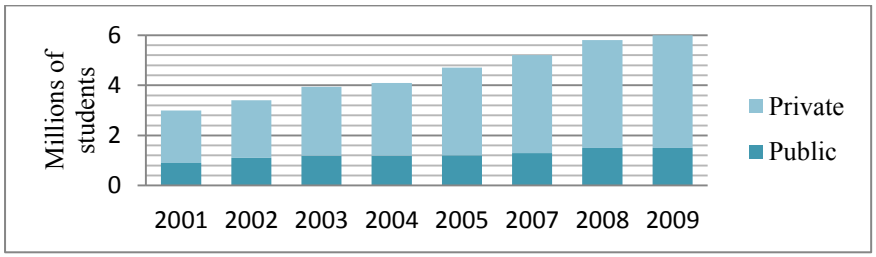
With regard to the availability of funding for such endeavours, entry exam coordinator for the University of Campinas (UniCamp) Leandro Tessler (2007) claims that at least in the case of Brazil, one way of addressing this issue is to inform universities and students alike that not all higher education institutions must be teaching, research and post-graduate centers. This attempt by most universities to be fully operational in all three areas leads to overstretching of federal funds. It could be avoided if universities were willing to narrow their needs by specializing in teaching undergraduates *or* research *or* post-graduate options instead of attempting to be equipped for all three (Tessler, 2007). It must be stressed that the goal is to 'simply' make it more accessible to members of lower socio-economic stratums, not negatively influence the high standards of universities in terms of knowledge and information.

Empirical Review

As per the theoretical literature review, one requires more than a well-developed and equipped high school in order to be admitted into university. In fact, a large determinant of university access is how well-prepared and managed universities are to receive students. In the case of Brazil, where social inclusion is becoming a guiding principle, it is important to ensure that appropriate policies are put in place that encourage and permit democratization, not further deepen the problem of elite capture and social divide. A review of quantitative studies, a method that appears to be dominant in discussions of this sector, aims to draw attention to the empirical evidence on the university-access debate and what (if anything) is put out of sight.

Through the use of Inep (National Institute of Educational Studies and Research Anisio Teixiera) statistics, Franco (2008) suggests that there is somewhat of a duality found in the higher education sector during Lula's era. On one hand, there were significant financial investments; on the other, the expansion witnessed was far from democratized (Franco, 2008). The problem is not the lack of adequate funding necessarily, it is more so the fact that it [funding] should be more appropriately linked to goals, objectives and results (Franco, 2008). Having said that, Franco (2008) criticizes the launching of ProUni by the federal government as it was a move in the wrong direction. As a result of ProUni, an aggressive expansion of private higher education institutions has occurred (Figure 1) and this has, according to Franco (2008), strained government funds needed in the public sector.

Figure 1. Evolution in Enrollment Rates in Higher Education (undergraduate), Brazil



Source: MEC, 2010

The studies on the other programs in place, such as ReUni have also received mixed reviews. Schwartzman (2011) critiques the academic drift occurring in higher education in Brazil as a result of these programs. The tendency toward uniformity that programs like ReUni are reinforcing goals that may be in conflict with each other (Schwartzman, 2011): where the same mechanism the federal government uses to measure the quality of secondary education is also used as a criterion in affirmative action programs. With 6.148 million students currently enrolled in undergraduate studies (PNAD, 2011) and more being admitted, these issues must also be reviewed in order to prevent programs and investments from reinforcing the flaws of the existing educational system.

The factors here presented were also included in the surveys for confirmation of their significance. This includes: the availability of night courses, the impact of the universities' size on the students' decision to attend, the role and usefulness of social inclusion programs, as well as the increase in private institutions, to name a few – included in the Table 3 (annex).

Part III. Case Study – Goiás, GO

The main purpose of the case study conducted in the state of Goiás was to determine which factors, amongst those listed in the literature review as influential to one's educational outcomes and access to university, are truly significant in the reality of students in Brazil [and should consequently be considered in the policy arena]. In other words, through surveys and interviews with key stakeholders, including high school and university students as well as teachers and the state of Goiás' Superintendent of Secondary Education, this portion of the study spotlights what *they* believe are the factors that facilitate and/or impede access to university and what areas require more policy attention. The role of socio-economic factors, high school characteristics, and university policies are explored in-depth, to allow for an analysis of whether the policies implemented during the Lula administration were in fact targeting the appropriate elements, based [or not] in the reality of those afflicted by the obstacles to higher education. Also, since the Brazilian literature on the topic of quality of education and policies often critiques the governments' over-reliance on quantitative figures, this study aims to review the case from a qualitative standpoint, to later examine how these approaches produce outcomes that are analogous at times and dissimilar in others.

The findings of this study have yielded mixed results, revealing areas where Lula's administration succeeded in targeting the appropriate factors, while also exposing components that stakeholders believe are important but were relatively neglected. Moreover, features discussed in the theoretical review of the preceding chapter are confirmed and refuted here, drawing attention to the gaps in the literature on the topic of access to higher education. In order to clearly identify said gaps in the literature and policy, however, it is important to take a step back and explain the methodology of the study – beginning with the rationale behind the choice of state, sample size, and questions.

Methods

The decision to investigate the state of Goiás for this study was made on a number of grounds. To begin, Goiás is near the median in the statistics on average household income: where Brazil's average income in 2010[12] was of R$632 per household, in Goiás it was R$ 630 (IBGE, 2010). This is a relevant variable because of the fact that states are the tier responsible for the secondary education sector. Analyzing a state with an exceedingly higher average income such as São Paulo, for example, would skew the results given the availability of more state funding (higher

taxes) for investment in public schools. Meanwhile the results of states with very low average incomes would yield the reverse. Moreover, the field research aimed to confirm or deny the importance of income when comparing the quality of public and private high schools within the municipality, but also to assess its [SES] role between municipalities (i.e. are the schools in high income municipalities more equipped to the needs of students than their lower-income counterparts?). As such, choosing a state in the median in terms of average income would avoid extremes and allow for a wider application. In addition, while the rate of students attending university in Brazil was of 9.2% in 2010 (IBGE), Goiás presents a 7.7% rate (IBGE, 2010). This factor was considered because in order to fully understand if in fact Lula's policies were responsible for the rates of enrolment, one must assess an area with higher rates to better understand the reasons for their 'success'.[13] Lastly, proximity, time and resources also played a role in determining the state suitable for this study.

The choice to conduct this study in different municipalities, one of low and one of high average incomes (with a pilot study in mid-average income municipality), aimed to explore and present a better picture of the divergence in educational provision and interest in higher education between different income levels/different municipalities *in addition to* exploring the extent and effect of the public vs. private divide at the high school level. It is important to note that the municipalities chosen were based on a list of cities in Goiás that had at least one public and one private high school and therefore are not precisely indicative of the lowest and highest income levels of the state. The municipalities explored were Jaraguá (lowest on relevant scale), and Goiânia (highest). The pilot study was conducted in the municipality closest to the median, Petrolina de Goiás (IBGE, 2011). Students from the Federal University of Goiás (Goiânia) were also included in the study via their participation in the survey/interviews, so as to better understand the stance of *former* high school students, their experience in being admitted and their opinions on the policies in place that assisted them [or not] in the process of becoming university students. In each of the municipalities, the goal was to survey thirty (30) students from a private high school and thirty from a public school, chosen based on their *ENEM* results[14], as well as five teachers from each. Although the original design included the participation of parents, it became apparent during the pilot study that parental participation in this form of study is virtually impossible in that region given that for the most part, students arrive at/return from school without their parents and they [parents] are not willing to complete surveys at home (many of which do not have the level of schooling necessary to feel comfortable with such forms). Thirty university students from the Federal University of Goiás also participated, as did the current Superintendent of Secondary Education in Goiás, Dr. Fernando Pereira dos Santos. The latter was included in order to better understand the government's position

on the conditions of the Brazilian public education sector, the choices of policies and the political opinion on how to proceed in the coming years. All participants provided their views on the current conditions of the Brazilian education system, specific to their school/experience and generally speaking.

The choice of questions was tailored based on the paradigms described in the literature. After a first section that asks basic profile questions (i.e. age, how many people in their household, whether or not they work, and other SES oriented questions), the following sections revolve around rating parental/teacher involvement and guidance, the conditions of the school and the policies implemented during Lula's administration. Lastly, they were asked to rate the importance of the different factors that surfaced in the literature review, separated in the same categories: (1) SES and other related factors, (2) attributes of the high schools, and (3) university characteristics and university policies. This includes the importance of access to internet, the influence of parental income and education, the relevance of the potential for higher salaries, the need for information sessions on higher education options and/or life after graduation, and many others (please see annex for full copy of surveys). All of these components, therefore, were included in order to confirm or refute empirically both the theories in the literature and the assessments of Brazilian indicators with regards to what factors shape and influence a students' ability to pursue higher education in Brazil.

Admittedly, this small 'n' study covers only a limited number of schools and stakeholders in a country with over 190 million people. As such, its representativeness can be supposed based on the features here discussed, yet it cannot be fully confirmed. Confirmation of how this case is demonstrative on a larger scale can only be provided upon the completion of a larger-scale project. Nevertheless, for the reasons already cited, the choice of state, municipalities, schools, and sample size have all been to ensure the sample is representative as possible despite the small numbers.

Findings

In order to paint the picture more clearly, it is important begin by stating that ninety-two percent (92%) of the high school students who participated in this study declared that they intend to pursue higher education upon the completion of their high school studies. This in itself already diverges from the statistics regarding the percentage of high school graduates that are successful in being admitted to university, which in 2012 consisted of only 19% of students between the ages of 17-24 (Inep, 2012).[15] Statistics such as this one will be explored in this section to highlight the gaps in the literature and policies during Lula's administration. They will also allow for a brief analysis of current President Dilma Roussef's strategies. For the purposes of clarity, this segment is divided into the same categories as the literature review, and both survey and interview responses will be reviewed. It becomes evident quickly that, while there are components of the sectors in question

(secondary and tertiary education) that were left unattended and/or underfunded during Lula's administration, there are also positive findings that unveil that the Brazilian government has advanced in its ability to determine what are the needs of its people in these educational levels.

Role of socio-economic status (SES) and other personal determinants

As the literature indicates that socio-economic factors and other personal determinants are arguably the most significant in determining one's interest in/capacity to pursue higher education, a number of questions regarding the relevance of SES factors and other household issues were posed to the participants of this study and this will be reviewed first. To recall, the features discussed included the role of parental income, education and involvement, as well as the importance [and limited] access to internet and personal aptitude. Students from higher-income homes were said to have more support for education and access to the tools necessary to pursue higher education, including access to university preparatory courses in Brazil called *cursinhos*. This phenomenon was said to preserve the inequality in Brazil, as those of higher-income homes are more likely to be admitted to universities, while those of lower-income homes are not represented in higher education in similar numbers.

Findings in this section of the study provided interesting insight on the variations in opinion between students of different municipalities as well as on the misconceptions of the literature. To begin, in terms of parental income, the students from the high-income municipality indicated in high numbers (average of 80%) that this is in fact an important component in the students' interest in/ability to pursue higher education. On the other hand, 70% of students from the public school in Jaraguá (low-income municipality) believe parental income is only slightly if at all important. This is interesting because the students whose parents have the lowest-income levels of the groups compared are the ones who do not believe this affects their access to university. It is important to note that this does not refute the claims made in the literature regarding the sizeable effect of parental income; it reveals that students are not necessarily hindered psychologically as a result of their parents' lower income levels.

Also related to income is the enrollment in university preparatory courses called *cursinhos.* A number of authors associated high income homes with enrollment in *cursinhos*, suggesting that the higher the family income the higher the chance students will take said courses. These courses are said to increase the chances of being admitted into university and since it was depicted as a resource used almost exclusively by students from higher-income homes, the literature suggests they are represented at the university level in high numbers partially as a result of this phenomenon. This was proven to be an erroneous statement, given that 80% of students (all groups combined) indicated they are not taking *cursinhos* and when looking only at the responses from students in Goiânia, 83% of

students from the private school and 71% from the public school declared they do not take said courses. In other words, although there are some students that have chosen to take *cursinhos,* this is not exclusive to students from high-income homes or to students from private schools specifically, as the literature suggests. When reviewing the responses of university students, 68% said they did not attend *cursinhos* while in high school and 52% said they did not after high school. Thus, the reliance on *cursinhos* to be admitted into university is not as prevalent as it has been given credit to be and as a result, the use of *cursinhos* will be dismissed from the list of factors that significantly affect educational outcomes here discussed[16].

Regarding the role of parental education, the majority of students indicated that their parents' education does not affect their interest in/capacity to pursue higher education. Fifteen percent (15%) of students from the public school in Goiânia (i.e. high-income municipality) with 15% indicated it was extremely important and 44% as somewhat important, followed by the students in the private school of the same city, with 53% declaring it to be extremely or somewhat important. As such, the trend appears to be that students from the higher income municipality believe their parents' education affects their educational outcomes more than their lower-income counterparts. This belief, when compared to the levels of education amongst the parents of the students who participated, becomes worthy of note considering the higher levels of educational attainment amid the parents in the high-income municipality. While thirty percent of students from the public school in Jaraguá indicated their fathers did not complete primary school and forty-three percent said the same of their mothers, and the majority of students from the private school of the same city (Jaraguá) indicated their parents completed high school – the parents' levels of education in Goiânia were considerably higher. At the public school, 24% of students (as opposed to the 4% in Jaraguá) said their mothers had completed their undergraduate degree while 19% of fathers (as opposed to 0%) were said to have the same. At the private school in Goiânia, 30% of students claimed their mothers have completed their undergraduate studies and 43% stated that was the case for their fathers (as opposed to 0% and 8% in Jaraguá respectively). These statistics confirm that the students whose parents have higher levels of education are the ones who believe parental education affects their (students) studies and outcomes.

In terms of parental involvement, interesting and unexpected results were also found. Although the literature suggests that parental involvement is more frequent and comprehensive in higher-income homes, this study revealed the opposite to be true. Only four percent (4%) of students from the public school in the lower income municipality indicated their parents are not at all involved in their studies. Among students from the higher income municipality, a larger percentage indicated their parents are not involved (15% of public school students in Goiânia said their parents

are not at all involved). When considering the levels of education among the parents of students from the lower-income public school, the rate of involvement exhibited in the field research contradicts the literature. Despite the fact that many of these parents did not conclude elementary school, support for education at home and parental involvement is high. Here, once again, it becomes apparent that while SES may affect a students' capacity to be admitted into university, it does not impact students' interest in pursuing higher education to the extent it is said to occur.

The other component examined in the SES section of the literature is access to internet. Unlike other areas reviewed so far, where the field research countered the assertions made in the literature, limited access to internet in lower-income homes was confirmed and students do in fact believe lack of access affects their educational outcomes. As the section on high school characteristics will underscore, although limited access to internet at home has been proven, this does not necessarily require policy attention. If high schools provide students with these resources, the need to tackle this SES based issue directly could be eliminated.

Ultimately, the responses given to the SES-related factors reveal that students' *interest* in pursuing higher education are not as directly linked to parental income, education and support as the literature suggests. This does not mean that these elements do not affect one's *capacity* to be admitted, yet it does confirm that there are high rates of interest in pursuing higher education, regardless of the students' socio-economic background. The study has unveiled so far that more often than not, the disparities in responses are between municipalities, as opposed to between public and private schools. So how should policy address this? This study aims to convey that there is limited need for SES related policies if the goal is to increase the rates of public school students enrolled in university.[17] The only SES-related policy that could be suggested does not even affect house-hold incomes or individuals per se; it would be to ensure that horizontal imbalances between municipalities are addressed by the government, in the form of funding, through proper calculations and monitoring, in order to avoid the evident inconsistencies. Although federal funding is already provided to states in order to address these imbalances, it is clear that the discrepancies between municipalities are not addressed as adequately. Having said that, it is important to note that this policy suggestion falls more closely under the category of high school characteristics as it does *not* aim to help particular individuals that qualify; instead, it would seek to stifle the visible differences in quality between schools in low versus high income municipalities.

Role and Impact of High Schools

Although the literature on the topic of access to higher education focuses greatly on the impact of socio-economic status, this study aims to prove that the role and impact of high schools is far greater and requires much more policy attention than the popular SES factors discussed. On this

matter, experts have stressed that private schools boast more infrastructure and suitable management in comparison to public schools due mainly to the former's access to more [private] funding. Upon reviewing the data collected during this study, this suggestion is confirmed in the case study. The private schools visited, both in Jaraguá and Goiânia, revealed higher quality teaching materials, general infrastructure, and teacher training to name few. In addition to the evidence that the private schools are more equipped to provide quality education to its students, however, it also became evident that the public/private divide is exacerbated by the difference in quality between the low and high income municipalities. In other words, although the private schools in each city proved to be better equipped for students' needs than the public schools in the same city, the high-income municipality boasted schools of higher quality than their lower-income counterpart, regardless of the type of school (both public and private). This confirms that the divide in quality is not only between public and private schools, but is also a result of the municipality's income levels (i.e. the lower the income level of the city, the lower the quality at both public and private schools in the area, although the private schools are still more equipped than the public schools). Ultimately, students that attend public schools in low-income municipalities are, in most cases, extremely disadvantaged in terms of high school educational attainment.

When the students that participated in this study were asked to declare which elements [under the heading of high school characteristics] are relevant in their interest in and capacity to pursue higher education, all groups were in agreement with the literature, indicating the school's infrastructure, teaching materials, teacher training and information sessions as crucial to their success both in high school and after. The most crucial components were said to be teacher training and the availability of information sessions on the options available to students upon the completion of their high school studies (i.e. university, technical training[18], etc.). In terms of satisfaction, the students from the public school in Jaraguá were the most dissatisfied with these features at their school. Eighty-five percent (85%) of students from this school classified the teacher training as 'poor' and fifty-one percent (51%) claimed info sessions are poor/terrible. Furthermore, sixty-two percent (62%) of students classified their school's infrastructure as 'terrible' and eight-seven percent (87%) said the same about the school's teaching materials. These rates expose the poor conditions of the public school in the low-income municipality studied, as students' rated almost all of the components said to be critical for the provision of quality education (i.e. teacher training, information sessions, infrastructure, and teaching materials) as unsatisfactory.

Compared to the responses from the public school in Jaraguá, other participating groups appear to be 'more pleased' with the conditions of their schools as a whole, but all revealed dissatisfaction with at least one attribute [or lack of the same]. As the literature 'predicted', after the

public school students from Jaraguá, the group that showed the highest levels of dissatisfaction were the students from the public school in Goiânia. Eighteen percent (18%) of the students from the public school in Goiânia declared the infrastructure is terrible, forty-eight percent (48%) of students rated teacher training as poor. As for the information sessions, said to be important in helping students understand their options and requirements for work/study after graduation, twenty-seven percent (27%) of students indicated they are dissatisfied with how their school tackles this important feature of high school education. On the other hand, the majority of students at both of the private schools (low and high income municipalities) gave high ratings to all of the components, with the exception of the availability of information sessions on post-graduation options. In Jaraguá, twenty-six percent (26%) of the private school students rated their information sessions as terrible; in Goiânia, 10% said the same. These statistics essentially confirm the claims made in the literature regarding the difference in quality between public and private high schools, the latter being much more equipped than the former. As was the case in the SES section, the field research also proved there are significant differences in opinion and quality between municipalities. This can be seen particularly in the case of the public school in the low-income municipality where students are clearly *more* dissatisfied than any other group.

The upcoming chapter on policy recommendations will shed more light on how these levels of dissatisfaction should not be as palpable as they are. Lula's administration did in fact vow to address issues of infrastructure, teaching materials, teacher training, and guidance on post-graduation options in Brazilian public high schools. So why are there still observable differences in quality between public and private high schools *and* between municipalities? The main obstacle here is *not* the lack of proper policies that address the components considered [by experts and confirmed by the field research] to be crucial, instead the problems lie in the insufficient funding designated by government to address these issues effectively. In other words, although the policy *design* was suitable for the issues that plagued the public high school education system during his time, the *implementation* of said policies was not as successful. The investment was either insufficient or it did not 'reach the ground' as intended (misuse of funds is a possibility but since that cannot be confirmed, additional investment and increased monitoring is the main viable solution).

In the interview held with Goiás` Superintendent of Secondary Education, Dr. Fernando Pereira Santos, the 'underfunding' of secondary education initiatives was in fact acknowledged as a true impediment to real success. He stated that:

> "We, here in government, are doing what we can even if/when it is not sufficient. We understand that many times it is not. The truth is, however, that this is the place to be if we wish to see change – so as testing as processes might be we have to adhere, while never

> surrendering in the battle for the rights to quality education of the citizens of our state and of our country."

Dr. Santos acknowledged the system is far from perfect. Yet, he argues that any real changes to the secondary education sector and access to university must be made via government, as education is a key component of the country's success and is its responsibility to address. Although he recognizes the limitations (in planning, funding, monitoring, and reviewing), he also stressed that there have been successes. Despite the inadequacies of the current secondary education sector and access to university initiatives, Dr. Santos stressed that the picture a couple of decades ago was exponentially worse and both quality and enrollment improved significantly during Lula's administration. While this may be in fact the case, 'better' is not the end goal – 'first-rate' or at least up to par with the private schools in the country, is.

The review of students' stance towards the quality of their high school education coincides to a large extent with the claims made in the literature and the quantitative figures used in Brazil to determine policy. While there were implementation issues that will be discussed in the next chapter, the fact that triangulation confirms the policies are attempting to target the *true* obstacles is very positive. Despite the barrier to real improvement caused by underfunding, this essentially means that the Brazilian government is in tune with what the students and teachers need in the secondary education sector. In the tertiary education sector, however, the obstacles appear to be in policy *design*, where key components to the success in increasing rates of public school students in public universities, were overlooked in the policy arena.

Characteristics of Universities and University Policies

Much like in the previous segments, the responses to the questions about university policies and access unveiled mixed opinions. It is important to recall that the university-oriented policies in place during the Lula administration (mainly ProUni and ReUni) targeted public school students. Given the evident advantage private school students have as a result of the higher quality education they receive, these policies aimed to avoid further advancing the opportunities of private school students, by concentrating on the group in need of assistance.

In spite of the government's attempts, however, public school students have expressed in high numbers, their belief that ProUni and ReUni are 'better than nothing' yet far from 'ideal'. To begin, the ProUni policy by definition aims to increase the rates of public school students in private universities. As discussed earlier, this does not help further the goal of facilitating access to public universities. It also does not reflect the interest of the majority of high school students: 78% of all students surveyed indicated they plan on pursuing public universities for their tertiary education[19] , recognizing the superior quality of public universities and reduced costs of the same. In terms of the

ReUni policy, although it pledges to help students' entry into public universities through social quotas, ninety-six percent (96%) of the students surveyed had never heard of said program. This means the latter policy did not reach the ground as intended. Thus, given that the explicit goal of the government was to increase rates of public school students in public universities, there were issues with both policy *design* and *implementation* here.

Responses amongst private school students regarding the importance of ReUni and ProUni expose their disregard for said policies. It does not affect how hard they strive in high school nor does it impact their interest in higher education. These students, from the private schools of both municipalities, focus their efforts on scoring well on the National Secondary Education Exam (ENEM), an exam created by former President Fernando Henrique Cardoso, but greatly expanded during the Lula administration. The grades students obtain on this exam are used by universities as an admittance requirement, students who score well can choose to apply based on their grade on the ENEM as opposed to taking the *vestibular* (university entrance exam). Forty-seven percent (47%) of the students from the private school in Goiânia rated the ENEM as extremely relevant in their interest in/capacity to pursue higher education (plus 50% that declared it to be somewhat important). In the private school in Jaraguá, a lower percentage of students perceive the ENEM as highly relevant (17% extremely important; 54% somewhat), yet these rates are still considerably higher than in the responses from public school students of the same municipality.

Among the public school students from Jaraguá, the interest in the ENEM is low mainly due to the fact that students are aware that the quality of the education provided to them does not prepare them enough to score well on the exam. From this group, thirty-five percent (35%) of students declared the ENEM is not at all important to their academic standing or aspirations. Fifty percent (50%) also declared social quotas to be 'not at all important'. What is disconcerting about this picture is that if 87% of students from that school wish to pursue higher education, yet they are aware they are not equipped to meet the high pass-mark requirements of the ENEM, how is it that they will have the knowledge to pass the *vestibular*, known to be much more comprehensive? The answer to this seems to be that a high percentage of these students will not be admitted, despite their interest in higher education.

Although students from the public school in Jaraguá seem discouraged with regards to the opportunities ENEM can provide to them, the students from the public school in Goiânia have a very different view. This group showed the highest levels of interest in the ENEM and social quotas, with 53% and 35% of students declaring these features to be extremely important, respectively. While public school students know the quality of their education is not up to par in comparison to private

schools, these students from the public school of the higher income municipality, understand that these procedures are their opportunity to be admitted into federal universities.

In contrast to the popularity of social quotas among public school students from Goiânia, private school students from both municipalities vehemently expressed their disregard for this concept. Students from the private schools surveyed believe that social quotas are not a suitable way of addressing the lack of quality in the public education sector. In the interview segment of the study, 93% of private school students conveyed the message that policies to address the issue of low rates of public school students in universities should focus on improving the public education sector to allow public school students to 'fairly compete' for seats at universities. To them, the concept of social quotas does not reward anyone in the long run; instead, it puts students from high income municipalities and homes at a disadvantage they do not deserve to bare.

Ultimately, the group that most values the policies of the tertiary education sector are the public school students from the high income municipality of Goiânia. These students seem to understand the deficiencies of their education system but, they also know that in terms of the policies put in place to help public school students, they are the most equipped (in comparison to other public schools) given the even lower quality of education being provided to students in public schools in low-income municipalities. It therefore becomes evident that there are positives to these policies, but only a portion of the students in Brazil are experiencing the benefits of them.

Dr. Fernando Pereira Santos, Superintendent of Secondary Education in the state of Goiás, emphasized what he believes to be the main obstacle to adequate university entry policies: lack of communication. Currently - and during Lula's administration – the degree of communication between the secondary and tertiary education sectors is practically nil, and this has proven to be a considerable disadvantage to both groups. Teachers at the high school level do not know what will be tested and so many run the risk of spending time on subject matter that will not be on the exam, while neglecting areas that will. When one adds this lack of communication to the already troublesome picture of the Brazilian public high school sector, the obstacles for public school students to be successful in their pursuit of higher education are substantial.

As a result of the lack of insight of the Brazilian government to include policies that ensure effective communication between sectors (while they are vowing to facilitate the transition from one level of education to the next), and the limited success of the ReUni and ProUni programs amongst students, it can be said that Lula's administration failed in its policy *design* in this sector. Recommendations on how to alleviate the problems faced due to this design issue are put forth in the next section.

Part IV. Policy Recommendations – A Look into the Future

Based on the triangulation between the academic literature, Brazilian education indicators and the field research, the following suggestions are presented, divided into the same categories as the literature review.

Role of socio-economic status (SES) and other personal determinants

While effects of the disparity in socio-economic status amid the Brazilian populace are evident, no policy to address this [disparity] is absolutely necessary if the goal is to increase the rates of public school students in public universities. In other words, while the vast inequality in Brazil is undeniable (many sources to support this), there are factors that are more direct - investment in the secondary education sector and more communication between the secondary and tertiary levels of education, to name a few - that can solve the 'low rates' problem more effectively. Furthermore, the field research proved that parents' low income and educational levels do not affect students' *interest* to pursue higher education to the extent the literature suggests. Although it was confirmed that students from lower-income municipalities are disadvantaged in terms of quality of education, attempts to tackle the 'low-incomes' issue would be exceedingly costly and only possibly effective.

Role and Impact of High Schools

In the secondary education segment, triangulation has confirmed that the policies implemented in this sector during Lula's terms as president were, in fact, targeting the appropriate factors. Although there are rampant critiques amongst Brazilian stakeholders of the over-reliance on the quantitative indicators used to determine investments, they do, for the most part, highlight the factors that truly require more attention (as confirmed by the qualitative portion of this study). In this sector, the problem seems to be in the *implementation* of these policies.

The importance of a number of variables taken from the literature were confirmed during the field research (and also supported by the Brazilian indices used by the government). Generally speaking, *infrastructure, supplies, teacher training,* and *information sessions on post-graduation options* were the main features that still require attention, despite the investments made to address these issues. In other words, while the policies implemented during Lula's administration attempted to tackle these issues, the investment was either insufficient or it did not 'reach the ground' as intended.

The federal government should invest 10% of the GDP as promised by the current president Dilma Rousseff and increase the per pupil spending in the secondary education sector, while ensuring that horizontal imbalances within states are being addressed through the use of a monitoring mechanism. Perhaps the federal and state offices that monitor investment could be updated and harsher penalties could be put in place to tend to the potential misapplication of funds. This

additional investment could [if substantial enough] reduce the disparity between the quality of education between public and private high schools through the provision of improved infrastructure and supplies.

Regarding teacher training, there were/are policies in place to encourage teacher training but given the needs of lower-income municipalities, eligibility requirements and training are not considered to the fullest extent. As one of the policies also to be recommended at the tertiary level implies *added communication and interaction between the secondary and tertiary education sectors*, training could be delivered by/at the public universities in the region – making it 'easier' for teachers due to lower costs and reduced travel time. As for the issue of teachers teaching materials that they are not trained in, the utopic recommendation would be to prohibit schools from hiring teachers in fields they are not qualified to teach but given the low nos. of teachers in lower-income areas, more research focus on this aspect is required in order to put forth sound policy advice.

On the issue of information sessions, this aspect could 'easily' be solved with a policy that stresses the need to inform students of their options. Mandatory sessions for students in grade 10 and above could help students determine what is the appropriate course of action for them after grad, be it higher education, technical training, etc. Both high school students and university students that participated in this study expressed the importance of having info sessions to help students determine not only what is the appropriate course of action but also guidelines on how to proceed once they have decided. While this could be included in federal policy to ensure all states abide, it can also be successful if funded and organized at the state level. Costs of this are low and organization manageable.

Although high school education is the responsibility of state governments in Brazil, given that the main issue appears to be insufficient funding – there must be a federal component to revised policies, ensuring additional investment from federal government to avoid repeating the same mistake of under-funding crucial reforms and to reduce horizontal imbalances even further (as field research confirmed the disparity in quality of education when comparing low-income municipalities to high-income municipalities).

Characteristics of Universities and University Policies

With regards to the tertiary education sector, the policies implemented during the Lula administration appear to have been flawed in their *design.* To begin with, the main program put in place to facilitate public school students' access to higher education was ProUni: a policy that allows students to be admitted to *private* universities with lower pass-marks than their private school counterparts. As opposed to investing in public education, ProUni provides tax-exemptions to said

private universities and as these universities are not answerable to the federal government re: their quality, the effects of this policy can [will likely] prove to be adverse in the long run.

Considerations

Based on the evidence reviewed, the most suitable approach to increase the number of public school students in public universities would be to improve the quality of the education at the secondary level so as to give the students the necessary tools to pass based on their own academic merit. This is in direct contrast to the social quotas, that allow students to be admitted with lower pass-marks, as this does not address the substandard education students have received in high school and the fact they are not academically equipped, for the most part, to keep up with university-level classes (that begin with the presumption that the basics have been covered in high school).

The interview held with the Superintendent of Secondary Education in Goias unveiled that, if the goal is to increase the rates of public school students in public [federal] universities, a policy that stresses and structures communication and interaction between the secondary and tertiary education sectors could be very advantageous. This is said to be the case for a number of reasons. For one, increased communication would allow teachers at the HS level to have a better idea of what will be on the vestibular/what to focus on in their classes (avoiding the risks of spending too much time teaching material that is not covered). This does not necessarily mean telling teachers exactly what will be on the exams but, currently, there is no communication between these levels and so teachers are left in the dark of what the university level committees find relevant. The party who is most disadvantaged due to this current lack of communication is the students. Secondly, increased communication could allow HS teachers to voice their opinions on how exhaustive the *vestibulares* have grown to become – working together with universities to develop suitable entry exams.

The alarming picture the field research paints is that, to date, the profile of federal university students continues to be those of high-income homes, from high-income municipalities, that attended private schools and have highly educated parents. Although I disagree with social quotas, it is important to note that Brazil cannot jump-start the representation of different social groups in university without the use of social quotas. As such, the recommendation is to address the real problems (mainly in secondary education sector due to years of overlooking it), understanding they will not yield tremendous short-term results but will in the long-term 'solve' the problem of substandard public education that has plagued Brazil since its inception.

Based on the assessments made here, it can be said that current President Dilma Rousseff who is also from the Brazilian Worker's Party (*PT – Partido Trabalhista*), is moving the secondary education sector in the right direction in some aspects but appears to be erring in others. On April 3, 2013 Dilma announced once again that she aims to invest the petroleum royalties granted to the

Brazilian government on education (CNEC, 2013). She has been declaring in recent months that such an investment is necessary in order to witness real change and improvement in the education sector; much like Lula, Dilma often states that quality education is necessary as Brazil aims to become a less unequal nation (CNEC, 2013). This added investment, if it passes, can be a tremendously positive move –if applied and monitored adequately- given the evident need for additional investment. In her April appearance, she also acknowledged the current "pockets of excellence" throughout the country, and affirmed this must change in order to allow students of any and all regions of Brazil equal opportunities. This is also a positive approach, as the research here discussed has also shed light on the horizontal imbalances that occur in the provision of education.

Current Minister of Education, Fernando Haddad, expressed his enthusiasm with Rousseff's decision to follow Lula's path with a "touch of innovation" to accelerate the steps of the processes to see tangible results sooner. He also agrees with Rousseff that the secondary education sector needs an "injection that boosts drive and improvement" (CNEC, 2013). These are both aspects this paper corroborates the need for. However, the current president's agenda is not all seamless. Despite Rousseff's pledges of additional investment, these have not occurred to the extent promised to date. Furthermore, as part of her "boost", Rousseff has encouraged (through policy) public universities to allot 50% of their seats to students from public schools, allowing them to be admitted with a lower pass-mark. While this 'social quota' can increase the rates of public school students admitted into public universities, it does not tackle the deficiencies of the public high school education sector and almost seems as if the current government aims to bypass the manifest need for significant reform in the same. Increasing access in this form does not provide students with the tools needed to succeed in university, as it lowers the requirements but does not address why requirements need to be lowered to allow access.

The evidence here reviewed thus suggests that while Dilma is more than accurate on some of the needs of the Brazilian education system (i.e. added investment and monitoring), the goal of equal opportunity and access will only be achieved if more attention is paid to the secondary education sector, with the goal of tackling the inferior quality of the public high school education and the variations in quality by municipality and region. Attempts to bypass this much needed reform will lead to limited successes, if any. Much like other segments of government, the education sector works as a machine: if one piece is 'broken', the machine as a whole will not run smoothly.

Part V. Closing Remarks

The scholarly works reviewed which analyze the factors that affect educational outcomes, underscore the significant interconnectedness of the main issues[20]. The studies do not fall solely in

one paradigm or another since the overall logic and assumptions are the same; although some authors may stress the importance of socio-economic factors and others the need for high school education reforms (as well as the need for university reform), the acknowledgement of the relation between these factors exists almost across the board. The general consensus in the literature regarding the importance of education and the variables that affect outcomes spotlights the advantages of more students pursuing higher education and the current limitations they face. Furthermore, this broad conformity in the factors makes way for the small 'n' study conducted, as the surveys and interviews confirm and refute the significance and effect of these factors to the Brazilian students, faced with the option (or not) of pursuing higher education.

Although one cannot deny the significant role SES plays one must also acknowledge how challenging it can be to present policies that tackle these socio-economic inequalities straightforwardly. Policies that focus on improving the high school sector could potentially bypass the need for social welfare and other programs of that nature; policy attention in the secondary education sector would also help improve the conditions of a sector in much need of reform. More specifically, additional funding and policies geared towards truly facilitating the transition of students between one educational level and the next are needed, making room for individual and national growth. Providing students in public schools with quality education could safeguard them from being disadvantaged as a result of their public schooling. Restructuring the education provided at the high school level to ensure that the required quality is being offered equally at private and public institutions would already greatly reduce the difficulties public school students face. Providing students with the necessary tools in high school would do more than bridge the gap between public and private schools. It would also allow more representativeness at the university level as more students from lower-income backgrounds would have the essential skills needed to be admitted; ultimately reducing the impact of socio-economic status on education and consequent opportunities. In other words, if the same quality education was provided in both private and public high schools, throughout municipalities, the differences in opportunity would be reduced. The now critical role of SES on educational level and university access could diminish. With this degree of equality of opportunity and assuming that the rates of enrolment in higher education increase, the vast inequality that exists in Brazilian society today could also be moderated. This would provide opportunities for social mobility and pave the way for the further development the Brazilian government aims to achieve.

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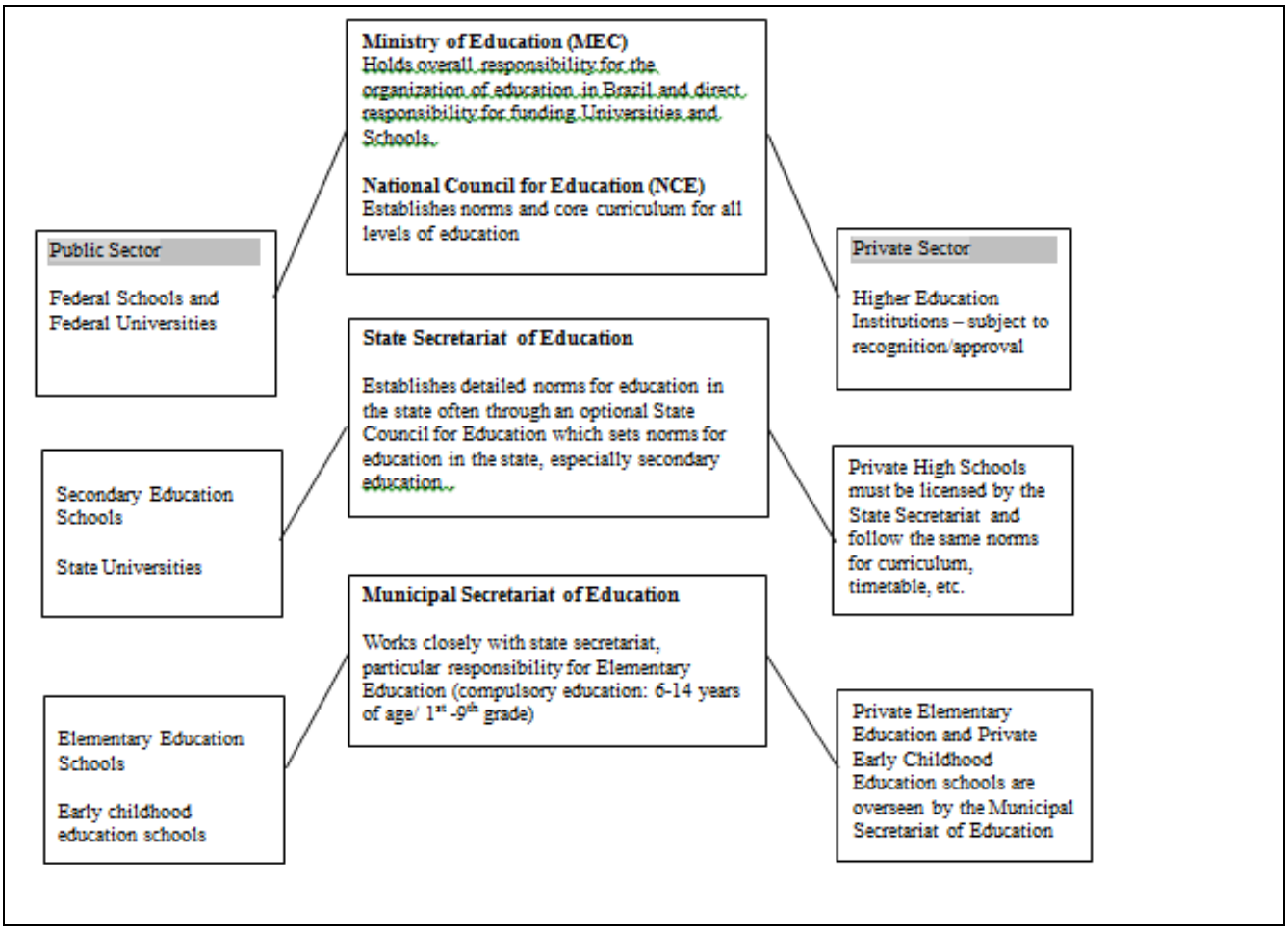
Annex 1. Administration of Brazilian Education by Levels of Government



Source: Info retrieved from Ministry of Education (MEC), 2011.

Annex 2. Lula's Policies re: improvement of secondary education sector and access to higher education

Paradigms	Lula's Policies
Socio-economic factors and other personal determinants:	** None of Lula's policies addressed these factors as part of their commitment to improve the secondary education sector, or to increase the rate of public school students admitted into public universities – Nevertheless, these variables are important to include because the field research *may* indicate that these factors are very influential in the students' interest and capacity to pursue higher education, and should consequently be considered in policy design (policies: ways to bypass effects of SES on educational attainment).
Quality & Attributes of the Secondary Education Sector	(1) Ample number and use of quality facilities, equipment and resources (including but not limited to: new libraries, computer labs, textbooks, lighting, ventilation, etc.) (2) Monitoring of teaching practices and student learning - Pedagogic/political practices defined and known by all stakeholders (3) Improved salary for teachers - Sufficiency and stability of school staff (4) Adequate planning - Varied and transparent mechanisms to evaluate students - Democratized information - Access, understanding, and use of official indicators for evaluating the school and school networks (5) Provide additional and effective guidance on options after graduation (i.e. pursuing higher ed., technical training, joining the work force, etc.) (6) Acting school councils - Effective participation of students , parents and the community in general
Universities and University Entry Policies	ProUni: Expansion Program to increase enrolment rates of public high school students in universities by facilitating their entry into private universities through government grants to outsourced private universities -ReUni: Expansion program that seeks to facilitate students' entry into public federal universities through social quotas etc. * Both ReUni and ProUni utilize the National Secondary Studies Exam (ENEM) as the determinant. • ENEM: The National Secondary Education Exam, is a non-mandatory Brazilian national exam, which evaluates high school education in Brazil. The test is utilized as a standard university entrance qualification test. ENEM is the most important exam of its kind in Brazil, with more than 4. 5 million test takers in 1.698 different cities (Inep, 2011). - Expansion of public tertiary education system: building new public universities throughout the country to address demand and government needs.

Annex 3. Tables – Paradigms in the Literature

Paradigms	Lula's Policies

Socio-economic factors and other personal determinants:	• *Parental Income*
	  ○ *↑ income often = private schools for children*
	  ○ *↑ income often = ↑ability/willingness to pay for prep and language courses*
	• *Parental Education*
	  ○ *↑ education = ↑ chance children will pursue ↑ education*
	• *Other personal determinants*
	  ○ *Parental involvement/influence*
	  ○ *Access to computers/internet/technology*
	Individual characteristics: intelligence and personal motivation

Quality & Attributes of the Secondary Education Sector	• *Tuition returns are what permit improvements in infrastructure*
	  ○ *Private schools = ↑ returns = ↑ infrastructure*
	  ○ *Public schools = ↓ returns = ↓ infrastructure*
	• *Infrastructure needs*
	  ○ *↑ available = ↑ interest and grades amongst students*
	  ▪ *Teaching materials*
	  ▪ *Trained teaching staff*
	  ▪ *Adequate management (with training)*
	  • *Supportive work environment*
	• *Leadership and Information*
	  ○ *Importance of instructional and communitarian leadership*
	  ▪ *↑ available = ↑ interest and grades amongst students*
	  • *Positive social networks*
	Ample and accurate information on career/higher education options

Universities and University Entry Policies	• *Elitist nature of higher education (around the world)*
	  ○ *Contributing to the preservation of inequality*
	• *Social Inclusion as a guiding principle*
	  ○ *Student aid (mainly N. America)*
	  ○ *Social Quotas and progressive entry exams (Brazil)*
	  ▪ *Must ensure aiding students of lower SES does not impact quality of higher education*
	• *Universities' Current and Future Capacity*
	  ○ *Not necessarily equipped to receive more students*
	  ▪ *↑ students = ↑ infrastructure needs*
	Includes ↑ classrooms, ↑availability of courses, ↑ professors (and often ↑ wages)

[1] Federal universities were selected for this study because they are deemed to be the finest in the country (vs. state universities) (Rondoni, 2011). In addition, their reduced numbers in comparison to a larger sample size including other higher education institutions will facilitate data collection for the upcoming section. Federal universities are by definition public (free of charge) and should [in theory] be accessible to all regardless of their income if they meet the educational standards to pass the *vestibular*, the university entry exam.

[2]It is important to understand the separation of powers agreed upon in the Constitution of 1988 -regarding the setup of the Brazilian educational system- between different levels of government (i.e. the Union, the states, the Federal District and the municipalities). Annex 1 includes a chart describing how the different levels of government administer the Brazilian education sector.

[3] While praiseworthy, it is important to note that conditional cash transfer programs are only a short term solution to the poverty issue in Brazil. Although these ensure that students are attending school, it does not tackle the lack of quality education being offered at these schools. As such, while it may immediately alleviate the affliction of excessively low incomes, it does not assist in the long-term goals of the government of breaking the intergenerational cycle of poverty. Students are not receiving the education in public schools that would allow them to truly break from this cycle and earn higher incomes; thus, the focal point of this study is to determine if proper long-term mechanisms have been put in place.

[4] The two main policies at the university level were the ProUni and the ReUni programs. ProUni seeks to increase enrolment rates of public high school students in universities by facilitating their entry into private universities; the latter (ReUni) is an expansion program that seeks to facilitate students' entry into public federal universities – both utilize the National Secondary Studies Exam (ENEM) as the determinant. Valuable to note: most students and teachers interviewed during the pilot study had not heard of the second program (ReUni).

[5] Understanding what factors affect people's educational outcomes both in *country specific terms* (i.e. in Brazilian literature) and *generally* (i.e. around the world), allows one to spotlight both issues that have already been declared to exist in the country at hand while also looking at the larger picture to ensure that other factors have not been overlooked in the national academic, political and economic debate thus far – that should be included. In other words, it allows for a comprehensive list of factors that can affect educational outcomes and university access, crucial to the understanding of what factors should be considered in the policy arena and what should not.

[6] De Castro (2009) is the former state secretary of Education in São Paulo, former president of Inep (National Institute of Educational Studies and Research Anisio Teixiera) and former executive secretary of the Ministry of Education,

[7] DeCastro (2009) does, however, also applaud the recent developments in evaluation systems by stating that for too long policies have been based on speculation and this is without a doubt a step in the right direction.

[8] According to de Castro (2009), as a result of the recent attempts to universalize access to education in Brazil, many 'new' students are extensively disadvantaged in terms of language skills and in access to cultural goods. She discusses the weight of factors such as the level of education parents hold, the family's socio-economic standing, and so forth, based on an assessment of the statistics in said indexes.

[10] Relevant Government indexes reviewed: National Institute of Educational Studies and Research Anísio Teixeira (Inep), the Basic Education Development Index (Ideb – *Índice de Desenvolvimento da Educação Básica*) and its two components: the School Census (*Censo* Escolar) and the National Basic Education Evaluation System (SAEB – *Sistema Nacional de Avaliação da Educação Básica*). Also used: the National Secondary Studies Exam (ENEM – *Exame Nacional de Ensino Médio),* the Higher Education Census and the National Higher Education System (Sinaes – *Sistema Nacional de Avaliação da Educação Superior*).

[11] A variation of social quotas as described was utilized in the ProUni and ReUni programs employed during the Lula Administration. Please see footnote 3 for details on the two programs.

[12] Statistics from 2010 are being used in order to assess the situation immediately after Lula's administration.

[13] The state of Amazonas also revealed high numbers, closer to the national rate. However, it was not considered for this study given the distance and limited funds.

[14] The National Secondary Education Exam, is a non-mandatory Brazilian national exam, which evaluates high school education in Brazil. The test is utilized as a standard university entrance qualification test. ENEM is the most important exam of its kind in Brazil, with more than 4. 5 million test takers in 1.698 different cities (Inep, 2011). The schools with the highest grades could reveal successes (to be applied in other schools) and so they were chosen for this study – however, must note that it was exceedingly difficult to collect the data due to lack of collaboration so a number of private schools were removed from list.

[15] It also disproves to a certain extent, the claims made in the literature that students from low-income homes will likely follow their parents' decision to not pursue higher education. The fact that 74% of the students from the public school of the lower income municipality indicated that they work but still plan on attending university moves away from the assertion discussed in the literature review as well, which suggests this group would also be deterred from being interested in university

[16] Note: Statistics on the rates of students in university that were admitted after taking *cursinhos* is not available on a national scale. As such, *cursinhos* may be very relevant to the students' capacity of being admitted. However, given that

this is not an area where government policies would be suitable (if quality of education at public schools was high there would be no need for supplementary courses one *has* to take to be admitted into university), the notion of *cursinhos* will not be pursued further in this study.

[17] Note: this is not to say that conditional cash transfer (CCT) programs and other policies implemented to reduce the inequality in Brazil are necessarily inadequate; CCTs are suitable to address the short-term goal of encouraging students to complete their elementary and high school education (via cash incentives). The info in this section only stresses that *if the goal is to increase the rates of public school students in public [federal] universities*, attempting to tackle SES disparities head-on is not the most viable or efficient approach. CCTs or other SES-related policies do not speak to the long-term goal of increasing rates of public school students in university as they do not tackle the inferior quality of education being offered at public schools - that house the majority of high school students in Brazil. What is the point of helping them financially if they are not academically equipped to be successful in a university setting?

[18] The availability of quality technical training in Brazil is an area that requires more research and investment. Currently, this sector is under-funded and unsystematic in comparison to other education sectors; progress in this sector could yield exceedingly positive results given the current lack of quality training in the 'trades' and the high rates of students who are not admitted into universities and have limited options to increase income/specialization.

[19] 97% of private school students from Goiania (i.e. high income municipality – high quality of education) stated they want to attend a public university; followed by 76% of public school students from Goiania, 71% from public school students in Jaraguá and 61% from private school students in the latter municipality. These statistics prove that students who are most equipped to be admitted into *public* universities are private school students from high income municipalities, and in fact, almost all of them wish to do so.

[20] Different authors utilized different methods: Anderson (2008) employed a hierarchical linear model and interviews, Mazumder (2003) a linear regression, Plank and Jordan (2001) used multinomial logistic regressions with data from the American National Education Longitudinal Study, and Mora (1997) a logit model using the Spanish Family Budget Survey, to name a few. While diverse models were employed, results were largely comparable reflecting the wide-ranging concurrence on what are the most decisive factors that affect education outcomes and university access.