

# ProFIS: A New Paradigm for Higher Education in Brazil<sup>1</sup>

Public universities represent nowadays a relatively small part of the Brazilian higher education system, both in terms of number of institutions and in terms of enrolment. Approximately 3/4 of all undergraduate students in Brazil attend private institutions. Public institutions are, on average, much more selective than those in the private system. This profile has two basic causes: the higher prestige of public universities and the fact that they do not charge any tuition fees. However, many of the students who are accepted at public universities come from wealthy families, and relatively fewer are from poor families or from minority groups, such as afro-descendants. The higher selectivity has a clear effect of inhibiting them from applying to a public Higher Education Institution (HEI), as we will see in the case of the University of Campinas (Unicamp), one of the most selective universities in Brazil.

ProFIS (Interdisciplinary Higher Education Program) is a two-year undergraduate program that was established in 2011 at Unicamp. It was created with the purpose of increasing the access of low-income and minority students to the university in an innovative way, both in terms of the admission system and of the curriculum structure. It consists of a 2-year general education program, after which students are automatically admitted to a four or five-year undergraduate program at Unicamp, without having to pass an admission exam, selecting their next level of studies based on their performance.

We will briefly describe ProFIS, its curriculum, admission process, and its preliminary impact, also comparing its socio-economic status (SES) to that of the general undergraduate population. Although complete academic results for the first admitted class are not yet available, it is already possible to say that equity was fully achieved by the program, with a significant increase in enrolment of minorities, low-income and first-generation college students when compared to the usual university admission process.

## Keywords

Access to higher education – Equity in access – Liberal education – General education

## Introduction

Brazilian higher education, despite having experienced fast expansion rates in the last two decades (more than 200% growth in enrollment from 1994 to 2010), still shows a definite pattern of social exclusion. This situation is related to two main aspects: the public high-school system has not provided adequate preparation for students to compete for admissions in the better and free public system of universities, and the expansion occurred mainly in the private sector. In 2010, about 75% of the students were enrolled in private institutions in Brazil. In the state of São Paulo, the figures are even higher, 85% of enrollments are in that sector.

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As an indicator of the inequality of access to higher education, almost 90% of all students graduate from public high-schools. The socioeconomic status (SES) of youngsters enrolled in the public high-school system is typically much lower than on the private system. There is no system in Brazil for encouraging lower SES families to enroll their kids in the secondary private system. Nonetheless, the participation of students from public schools drops to 25-40% of admission rates in public universities, even lower in more selective universities. Also, the dropout rates (graduating class/first-year high-school population) in the public high-school system can be as high as 50%, always higher than 30%. The admission tests traditionally employed by the majority of the public universities, called “vestibular” represent a critical funnel for students who want to attend good quality post-secondary institutions. Most graduates from the public high-schools do not even apply to the better public universities assuming their poor academic preparation (Andrade, 2012). Thus, the wealthier strata of the population are actually those benefitting from the heavy public subsidies that go into the public HE system in Brazil (Andrade 2012; Pazich e Teranishi, 2012).

If one looks at access to HE in terms of race/color, Whites have almost three times more chance to reach college than non-Whites, even though the two groups finish high school at similar rates (Andrade, 2012). Low income seems the determining factor, since the chances of someone from the top quintile to have enrolled in college is about 18 times higher than for a youngster from the bottom income quintile. Nevertheless, even controlling by SES, non-Whites still have a lower participation in higher education, 2.5 times less likely to have enrolled if the student is from a family in the lowest income quintile, and about 1.3 times less likely if in the top income quintile (Andrade, 2012). So, moving up in the SES scale reduces but does not eliminate differences between groups of different race/color, in terms of access to HE. Actually, the situation is even worse. If one controls for HE sector and for more selective programs, the race/color differences will be even larger, as is the case of most highly selective programs at Unicamp. For example, although self-declared non-Whites make up 16% of all enrollment at Unicamp (excluding the ProFIS program), in Medicine the figure is closer to 13% (Comvest, 2012).

The young student (17 or 18-year-olds) must choose her degree program when applying for admission, without the ability to change it afterwards. Therefore, it is not surprising that, according to the 2000 Brazilian Census data tabulated by Nunes (2011), about 54% of the population with a degree in a regulated profession do not work in this area (see Figure 1). In Engineering, this number rises to 67%.

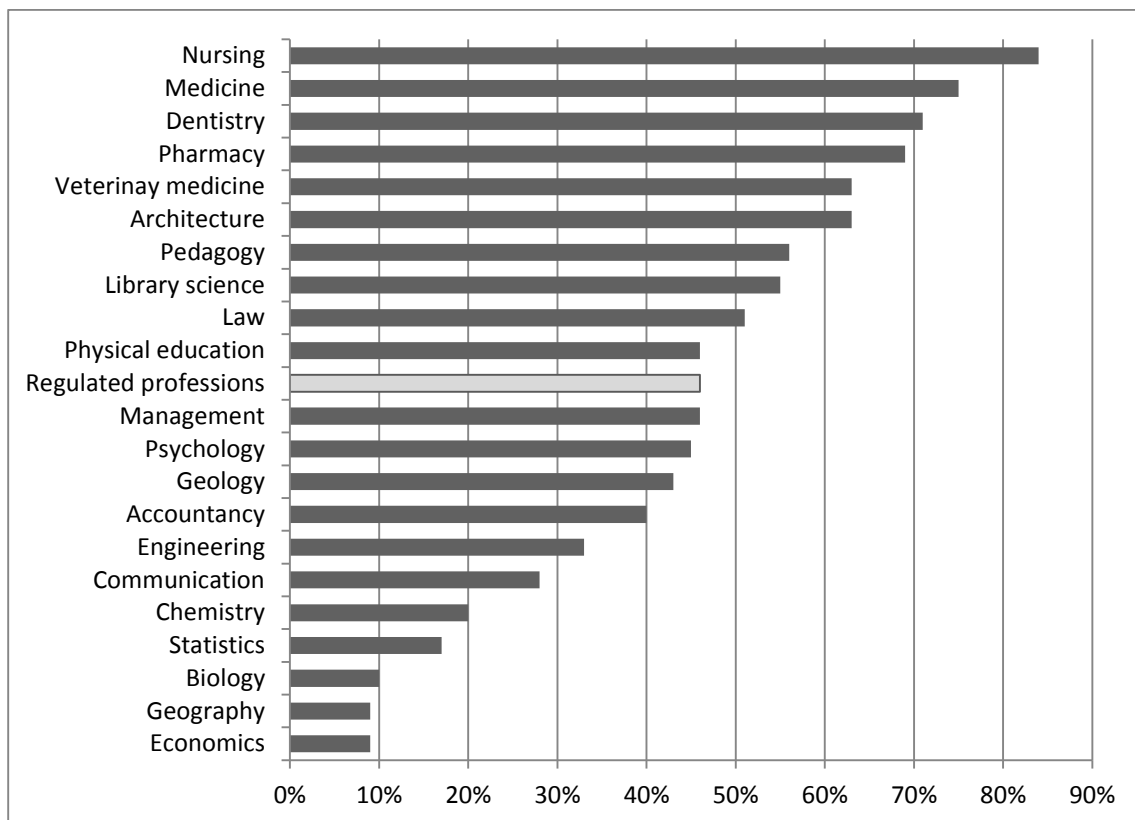


Figure 1 – Adult population working at the same field of the bachelor’s degree

Source: Nunes (2011) using data from 2000 Brazilian Census

To promote social inclusion, as well as to mitigate the undesirable effects caused by the early choice of a career, and the extreme specialization of undergraduate programs, Unicamp, a leading research university in Brazil, created the ProFIS program (a Portuguese acronym for Interdisciplinary Higher Education Program). ProFIS' admission system relies on selecting the best students from each public high-school in the catchment area, based on their scores at the National Exam requested for this student population by the Ministry of Education (called ENEM). Its curriculum aims to provide a broad background in major areas of knowledge, as well as activities focused on human, social and ethical issues. After completing the program, there is a quota of one-two vacancies for students to directly enroll in several undergraduate degree programs at Unicamp based on their performance in these two year program, without the necessity of making the so-called “vestibular” admission test.

We start by presenting aspects of the recent expansion of the Brazilian HE system, which has been in a movement from elite to a mass system. Then we discuss the ideas on social inclusion and general education that guided the creation of ProFIS, and the guidelines of the program. Finally, we present the socioeconomic and academic profiles of the first class, enrolled in 2011.

## Recent trends of the Brazilian Higher Education system

Higher education systems are classified as elite, mass or universal, according to the level of participation of the right age cohort in enrollments (net enrollment ratio - NER) among others factors (Trow, 2007). An elite system would be one with a NER of less

than 15%; if the NER is between 15% and 50% it is called a mass system; a universal system would be one at or above 50% of participation. It is relevant to have a more nuanced analysis when the system also has a large group of older students, as is the case in Brazil, where about 40% of the enrolled population is above 24 years of age. Presently the NER of the whole Brazilian system is around 15%, but the gross enrollment index (when all enrolled students are considered), is much higher, at about 27% (IBGE, 2009; Andrade, 2012). Thus, one may say that Brazilian HE is in transition from elite to a mass system (Gomes e Moraes, 2012). The pace of this transition has been very fast: between 1993 and 2010, enrollment grew from 1.6 to 6.3 million, increasing almost 7% per year of; the net enrollment ratio more than doubled. This contrasts with an almost stagnant student population (1.4-1.6 million) between 1980 and 1993, when a decreasing enrollment ratio was observed in parallel to the relatively increasing high rate of the population growth.

Not only has the systems expanded, but institutions and programs have diversified as well. Both vocational programs (called "technological programs" in Brazil) and distance learning have become quite common, and most expansion occurred in the private sector, actually a for-profit one. In 1993, 60% of the enrollment was in private HEIs, and 60% of that was in not-for-profit institutions. By 2010, 75% of the enrollment was in the private sector, with 2/3 of that in the for-profit universities and colleges. All these characteristics may be seen as aspects fitting a system in transit from elite to mass level (Trow, 2007). In São Paulo, it is important also to note the rise of the state vocational college system (known as the FATEC system), which enrolls about 60 thousand students in three-year programs dedicated to offer professional skills training at the higher education level. But, still, the whole public system of HE in the State of São Paulo, the most populated and developed in the nation, accounts for only about 15% of the enrollments.

The period discussed above (1994-2010) roughly corresponds to the two recent administrations that ruled Brazil, those of Cardoso (1995-2002) and Lula da Silva (2003-2010). Both had policies directly related to these changes, but the period was also one of economic stability and growth, which affects directly the demand for higher education and is related to the expansion of the for-profit sector (Gomes e Moraes, 2012). Still, the targets of the National Education Plan of reaching a net enrollment ratio of 33% by 2020 (about the average of the OECD countries in 2010 and roughly twice the present figure for Brazil) calls for even more expansion, possibly coupled with a change in the enrollment structure (higher participation for those under the age of 25). That seems unlikely, if present trends are kept. In terms of the adult population, only 11% of the 25 to 34-year-old Brazilian population have a college degree, compared to an average of 35% for the 34 OECD countries (OECD, 2010).

The expansion of the private system has been helped by the growth of public financial support, both in the form of low interest loans (program started in 1999) and of fiscal waivers for the for-profit system, linked to scholarships to low-income students (program started in 2005). Both have supported more than 1.4 million students in the last decade (Brasil, 2009). But, even if the waivers program has low-income students as the targeted group, it only partially benefits those in the two lowest income quintiles of the population, so that many of those graduating from public high-schools are still left out of high education.

Since 2005, the federal system of universities and technical colleges has also gone through a significant expansion of enrollment. Nevertheless, the overall impact is

relatively low, since the starting level was not very high. The freshmen class at that system has more than doubled in size since then, from a little over 120,000 students to about 300,000. On the other hand, it is worth noting that the increase in enrollment numbers has not yet been reflected in the number of degrees granted by public HEIs, which has stayed at about 200,000, yearly, since 2004 (that figure includes the state systems). A relatively large dropout rate (around 40%) is responsible for that figure, most likely caused by poor pre-college education and a lack of financial, social and academic support to keep the students in college.

Another important aspect of the recent development of the Brazilian HE systems has been the adoption of affirmative action programs by public institutions. The first such programs were established in 2003 in some state systems, for low-income, black and native Brazilian students. In the period since, most public institutions adopted affirmative action programs of some sort, including both quotas and other models, like entrance exam score bonus points (Pazich and Teranishi, 2012). Recently, though, after the Supreme Court considered that quotas were constitutional, Congress approved a law that establishes a system of quotas (for public school graduates and for racial minorities) mandatory in the federal system of HEIs. There has been much debate on the consequences of such programs, but there is still need for further studies, especially on the academic aspects and also on the impact on the low-income population. Anyway, even though the system growth is only partially derived from policies of inclusion, it has already promoted a change in the profile of the HE student: the enrollment of non-white students has increased 87% between 2001 and 2005, and the presence of low-income individuals has grown 67% in the same period.

Still, albeit all the advances in access that have occurred in the past two decades, it is important to observe that the public system is where most of the better qualified institutions are. This is evident from two indicators: the results of the National System of Evaluation of Higher Education - SINAES, which evaluates all aspects of institutions, and includes an assessment of learning outcomes (the National Test of Student Performance - ENADE), that show that most private institutions have very low scores, and the fact that the public institutions and a few of the private ones (almost all not-for-profit HEIs) have well-developed graduate programs.

Looking at all these data, it is clear that much is still to be done, especially regarding guaranteeing access to the public system, the best qualified HE sector. Moreover, many young people from low-income families prefer to join the labor market instead of investing time and money in a college education, although this decision may prevent them from benefitting from the high returns expected from having a HE degree. According to the OECD (2012), Brazil is, among countries with available data, where a HE degree has the highest return (compared to having only a secondary degree), about three times the average for OECD countries.

Therefore, public universities should not only provide access to more students of low-income groups, but also create new mechanisms to encourage these underrepresented students to apply for admission, in ways that they can see a perspective of success. In addition, since these students usually come from relatively poor cultural and educational environments, programs should be designed to provide not only a leveling of academic performance, but also academic opportunities both in terms of degree options as well as programs with a stronger general education profile, in order to make up for a relatively deficient education they have been offered so far in their lives.

## Unicamp and Its Commitment to Promote Social Inclusion

Educational public policies for social inclusion have as objective bringing disadvantaged social or racial groups to the same educational and cultural levels of the more developed groups in society, aiming at equalizing further study or job opportunities. As such, taking into account the returns and the opportunities for further studies that a HE degree makes possible, especially in Brazil, affirmative action programs to improve the chances of disadvantaged groups to get access to good quality higher education is certainly one of the most efficient mechanisms for social inclusion. However, increasing the chances of admission to a HEI is important, but not enough. To be effective, the policies adopted must ensure that disadvantaged students that are admitted remain at the university, get a degree and find a job, thus multiplying the effects of knowledge and experience acquired during college years. Therefore, the introduction of new forms of access to a HEI must be complemented by actions to ensure students' adaptation to the new environment, giving them academic support and providing proper advising and counseling as they progress along their programs.

The first affirmative action program adopted by Unicamp was the Program for Affirmative Action and Social Inclusion (PAAIS), established in 2004, with the class admitted in 2005 already benefitting from it. PAAIS is an affirmative action program that adds bonus points to the “vestibular” (admission exam) score of applicants that attended public high schools, as well as of those that declare themselves as black, "pardo" (i.e. mixed-race) and native Brazilian. Studies preceding the adoption of the PAAIS program (Pedrosa et al, 2007) showed that once enrolled at Unicamp, most students from public high schools had better performance (measured by GPA rank) than higher income students from private high schools, if one controls for performance at the admission exam. These studies were corroborated by recent data about students admitted by the PAAIS program. In fact, since 2005, the PAAIS has benefited about 30% of the students enrolled in Unicamp's undergraduate programs. Another characteristic of the program is that its effects are more evident in the selection of students to the most selective programs (those applying for admission at Unicamp's regular programs have to choose their major when they submit their application, as is the case for most Brazilian universities).

Despite the unquestionable benefits of the PAAIS program as a way to broaden the Unicamp admission system to combine academic merit and social inclusion, less than 30% of applicants are public high school graduates. This number strongly contrasts with the total graduation rates from high schools in Brazil, and specifically in São Paulo. According to the Ministry of Education's data (INEP, 2011), 85% of high school graduates in the state finished their studies in public high or technical schools. Therefore, the number of youngsters who have graduated from the public system and who do not apply to public universities such as Unicamp remains very high, characterizing a "self-exclusion" phenomenon. The reasons for this are many, from explicit lack of trust in oneself to compete in a very selective admissions' exam, to the lack of economic support and the need to enter the job market as soon as one finishes high/technical school.

Let us take the city of Campinas<sup>i</sup> as an example, where there is only one public university, Unicamp<sup>ii</sup>. Figure 2 shows that about 20% of the 92 public high schools in the city did not have a single graduating student applying for admission in 2008 or 2009. Taking into account that the average number of students graduating from public

high schools in the city is about 100, we see that most schools are highly underrepresented in the university's admission system. Figure 3 presents an even more dramatic picture of the problem, showing to what extent the average public high school student is excluded from Unicamp, since 55% of the city's public high schools did not have a single student or graduate enrolled at the university in 2008 and 2009. These high schools are mostly located in poor areas of Campinas. Among the other 45% about 20% had only one student enrolled. It is worth mentioning again that Unicamp is a public university financed by the state of São Paulo, and it does not charge students any tuition fees. It should, in principle, be very attractive for low-income applicants (even application fees are waived for students from low-income families). These facts indicated to the high administration of Unicamp, in particular to the Admissions Office and the Office of the Dean of Undergraduate Programs, that there was need to develop other programs, beyond PAAIS, to promote the inclusion of low-income students from the city's public high schools. That was one of the objectives of ProFIS.

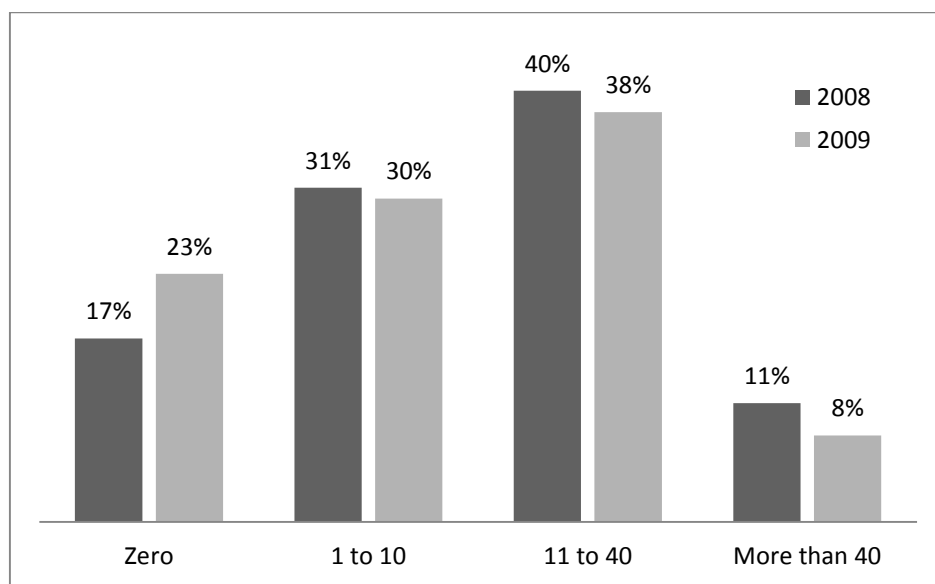


Figure 2 – Percentage of public schools by the number of applications to UNICAMP, 2008-2009.

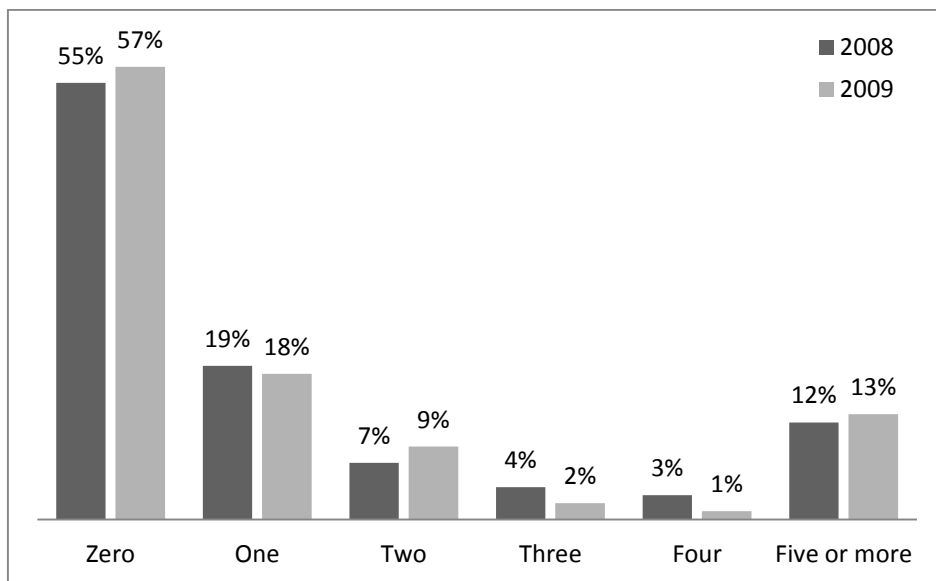


Figure 3 – Public schools by enrollments at UNICAMP per year, in percentage

## General Education and ProFIS

A second relevant issue related to ProFIS was the need to provide incoming students a wider view of the university before they would choose their programs, and the main way to do that was to offer a general education curriculum during their first semesters at the university. Part of the motivation for that proposal also came from the realization that, as societies become more and more dependent on knowledge-related activities, many of the skills that college graduates will need after they finish their degrees and along their adult lives are not directly related to proficiency in any specific subject area. Specific content excellence is without doubt the most important attribute of college graduates in the short run, but in their professional lives they will also need to work in teams and use communication skills and logical reasoning to perform contextual analyses and design strategies, taking into consideration social and global issues. If these topics are neglected, graduates may face difficulties when engaging in the global marketplace. Thus, besides granting ProFIS students the possibility of choosing their programs after a period of studies already at the university, we proposed a two-year general education curriculum, similar to that of liberal arts programs.

There is evidence that general education in college has a positive lifelong impact on the graduate abilities to be successful in seeking and keeping better paying jobs (Hanushek et al, 2011). So, even though it may seem that in emerging economies, as is the case of Brazil, higher education should concentrate in developing immediate job-related skills, it is important that the best universities also develop programs that include general education in their curricula. Beyond that, general education also prepares students to become not only a better worker, but also a citizen that engages in civic, political and social issues. Students that are exposed to a liberal arts program will likely have a more open attitude to other cultures and the world way, along with adopting a more ethical behavior, developing skills for lifelong learning professional development and global integration. Even in the highly regulated Brazilian HE system, 18 public universities have started such programs recently, including Unicamp, most of them federal universities.



ProFIS is a general education program aimed at developing student’s skills in the following areas:

- critical analysis,
- abstract reasoning,
- written and oral communication,
- knowledge of the natural world,
- teamwork and problem solving,
- quantitative and qualitative research,
- the ability to transfer knowledge from one scenario to another.

Students should also understand human, social, and artistic contributions from a multicultural point of view, while developing civic and social engagement. Another objective of this general education program is to promote intellectual diversity, seen as indispensable to foster critical thinking and the understanding of all aspects of life, in a broad sense.

ProFIS' curriculum was developed during 2009-2010 by a dozen experienced faculty members from different areas of knowledge. They were given the task of developing a program that would represent a breakthrough in social inclusion and pedagogical innovation. This working group developed the curriculum guidelines and its main features, including the admission process and the access of ProFIS students to other Unicamp programs after the two years. After some campus-wide debate, it was finally approved by the University Council<sup>iii</sup> in September of 2010. The first class was admitted at the beginning of 2011.

ProFIS’ admission system was inspired by the Texas Top 10% system, where the academic top 10% graduates of each Texas high school are granted admission to one of the University of Texas campuses (Pazich and Teranishi, 2012). Admission to ProFIS is based on the performance on the Brazilian National High School Exam (ENEM<sup>iv</sup>), ensuring each school at least one or two enrollments, with the scores in ENEM determining who will be offered admission. It is worth noting that this system and the program itself represent an important innovation in comparison to the traditional admissions system of Unicamp, with the consequence that at least one student of each high school will be admitted via ProFIS. This fact is fundamental to achieve a much broader socioeconomic and racial representation among students.

ProFIS curriculum is comprised of twenty-eight mandatory and two elective courses. The complete list of courses is shown on Table 1. English is mandatory and runs through the whole program, with 4 hours/week of classwork.

Table 1 – ProFIS curriculum with classwork hours/week

Academic area	Hours/w eek	Course	Hours/w eek
Languages	22	English I, II, III and IV	12
		Portuguese - Reading and writing I and II	8
		Portuguese - Essential texts in literature	2
Humanities and arts	20	Communication, art, culture, and society	3
		Youth, citizenship, and psychology	4
		Introduction to history	6

		Planet Earth	2
		Introduction to economics	2
		Science, technology and society	3
Mathematics	18	Basic mathematics	6
		Plane and analytic geometry	6
		Introduction to statistics	6
Natural sciences and technology	18	Information technology	4
		Environmental engineering	2
		Physics	6
		Chemistry	6
Biological and health sciences	23	Physical activities, health promotion and quality of life	2
		Ethics and bioethics	2
		Evolution	4
		The human body	2
		First aid	3
Academic research	16	Introduction to the practice of science and arts I and II	16
Other subjects	10	The careers	2
		Elective courses	8

Although the curriculum has a high number of hours per week, with an average of 29.25 credits per semester (1 credit is equivalent, in general, to 1 hour of classwork per week), 40% of the credits are related to practical activities developed in the classroom or in laboratories. Besides, there are also research activities, in which student develop an individual project under the supervision of a faculty advisor. The scientific research courses are a valuable contribution to the students' education, even for those that do not intend to pursue a research career, since they are required to review the literature about the subject of their project, synthetize the theoretical concepts, perform some practical experiments, write a report and present the results at Unicamp's annual student research conference.

After completing the program, ProFIS students receive a coursework certificate (which is recognized by the federal regulatory rules) and may enroll in another university undergraduate program of a more traditional flavor, leading to a full bachelors' degree. Except for one, all undergraduate programs at the university have reserved 2 or 3 seats, depending on the program, specifically for ProFIS graduate students. The admission process for these programs will be based on merit, taking into account the student's performance in the mandatory subjects of the program.

## Admissions to ProFIS, 2010

In 2010, there were approximately 9,500 students enrolled in the last year of public high schools in Campinas. However, ProFIS was only approved and launched in

September 2010, when the registration for the national ENEM test was already closed. Among those, only 3,484 students registered for the exam (mostly to enroll at a federal public university), thus reducing the pool of potential candidates to ProFIS.

Due to the relatively short notice, only 731 students applied for admission via ProFIS, i.e. about one-fifth of the high school seniors that took ENEM. As a result the competition ratio was 6.1 candidates for each place offered by ProFIS, still a relatively high selectivity ratio if we consider that the program had been launched just two months earlier.

Campinas has 92 public schools. Among these, 88 had applicants for the program in 2010. At the end of the admission process, 76 schools (83% of the total) had students effectively enrolled on ProFIS. Of the 731 applicants, 61.4% were women, a percentage that was reduced to 55.8% among the effectively enrolled students.

The average ENEM grades of applicants and students enrolled on ProFIS are given in Table 2, considering the 705 candidates that effectively participated in the admission process (the other 26 students were disqualified for getting a score of 0 in at least one of the ENEM sections). The overall average score referred to in the table is the arithmetic mean of scores obtained by the student in the five sections (language, mathematics, natural sciences, humanities and writing) of the test. It must be noted that ENEM scores are normalized, so the average score of all the participants in each section of the exam is set to 500, and the standard deviation is set to 100.

Table 2 – Average ENEM scores of applicants and students enrolled on ProFIS.

Test section	Average score		Standard deviation	
	Applicants	Enrolled	Applicants	Enrolled
Overall average score	561.8	605.2	71.6	40.0
Writing	622.1	682.3	126.7	110.3
Languages	549.6	582.8	66.0	38.0
Mathematics	553.5	597.8	106.9	66.8
Natural sciences	511.1	547.6	76.1	51.4
Humanities	572.7	615.7	83.6	52.9

Table 2 shows that the applicants for the program had reasonably high scores on ENEM tests (these scores are comparable to the ones obtained by the admitted students through the usual admission process – “vestibular”). Moreover, the overall average score of the students enrolled in the program was more than 100 points above the overall average of the exam, i.e., 100 points (out of 1000) above the average score of 4.6 million people that took the test on 2010. In fact, with the exception of the natural sciences section, most of the enrolled students attained a score above 550 on all of the test sections.

This result shows that the proposal of choosing the best candidates from each school has the effect of admitting students of almost all schools, but they still had a relatively high overall performance in the ENEM tests. If the selection were based only on ENEM scores, there would certainly be a concentration of students from a small group of

schools, just as for the regular "vestibular" system, which would prevent the social inclusion aim of the project to be reached.

However, a fact that also draws attention is the high standard deviation of the mathematics and writing scores. This parameter indicates one of the difficulties that teachers of ProFIS will face when dealing with the class: the heterogeneity of the students' background on these subjects.

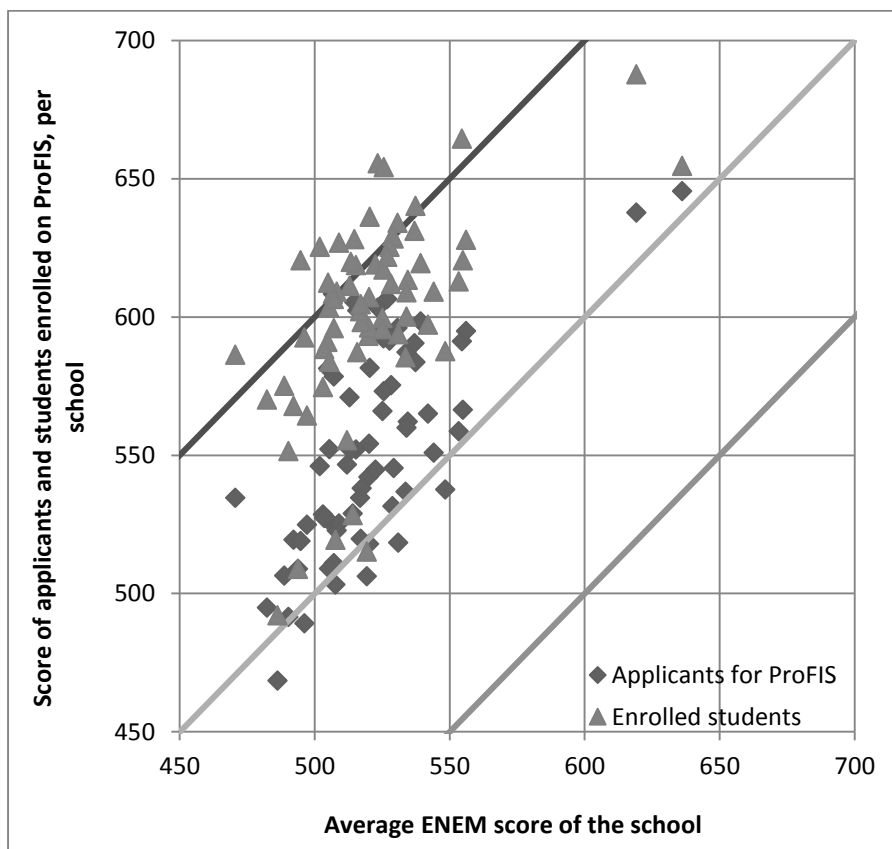


Figure 4 – Average ENEM score of applicants and students enrolled on ProFIS, per school vs. average school scores

One of the purposes of ProFIS is to allow students to join Unicamp even when the overall average ENEM score of their high schools are low. Many students in this situation would be able to continue their studies at a higher level, but self-exclude themselves from the very selective admission process adopted by most of the public universities. Figure 4 shows the average score of all of the students from each school that took ENEM versus the score of ProFIS applicants and students effectively enrolled on the program, per school. This figure reinforces the idea that, although the potential of the students would probably not be identified by the usual admission process, it can be revealed by choosing a minimum number of students per school. The leftmost pair of points on Figure 4 is a good example of such hidden potential: a student admitted to ProFIS took 586 points at the ENEM test, while the average ENEM score of his school was only 471 points.

Regarding the applicants that were admitted but declined to register in 2010, a survey was carried out in July of 2012 to find out the reasons for not taking advantage of this opportunity to enroll a high-reputation University. Among those, 64% (27) were enrolled in some undergraduate program, 10% (4) were enrolled in some other type of

program, 19% (8) were not studying, 7% (3) did not respond. Of those enrolled in some program, 69% said they were admitted under some affirmative action program.

In the survey there was an open-ended item that asked the reason for not enrolling on ProFIS. 27 replied it, and two main causes that were reported were the need to work (ProFIS is a fulltime program) and the desire to have a major declared from the start. 16 of those responding this question had been admitted directly to a major, including 8 that had been admitted to Unicamp itself, 3 people were admitted to other public HEIs and 5 of them to a private institution. 30% (9) said they had a need to work to support their family, with 4 of them having enrolled in evening programs, 3 in private institutions and 1 in a technical public school (secondary level).

Although admitted to ProFIS, many students were afraid of joining a completely new full-time university program, with morning and afternoon classes that prevent them from working to contribute to their family budget. In fact, most of the students that already had a job at the time they applied for ProFIS were reluctant to stop working, even those that had low complexity and poorly remunerated jobs.

Those concerns related to the innovative character of the program and the need to increase the family budget have also been detected among students enrolled on the program, so it was necessary to persuade some parents about the importance of family support to the attainment of academic goals of their children. In parallel, Unicamp granted scholarships (about the value of a minimum wage in Brazil) to students from families facing financial problems to allow students to devote more time to their studies and university life.

## Socioeconomic profile of ProFIS applicants and enrolled students

To find out how the admission process developed for ProFIS had performed regarding social and racial inclusion, applicants and enrolled students responded a SES survey that also included an item regarding the race/ethnic background. These surveys allowed us to compare the profile of ProFIS applicants with other students applying for or being admitted for other Unicamp programs, as well as to the population of 18 to 24 years with access to higher education in the state of São Paulo. In the following, we present the information about the race, *per capita* monthly household income and parents' level of education of applicants and students enrolled at Unicamp for both ProFIS and other programs.

Figure 5 shows the distribution of applicants and students enrolled on ProFIS in 2010 and on the remaining Unicamp programs for the period 2008-2010, according to the self-declared color/race. The five racial categories used in the figure are those defined by the Brazilian government: White, Black, Mulatto ("pardo" or mixed race), Asian and Native Brazilian.

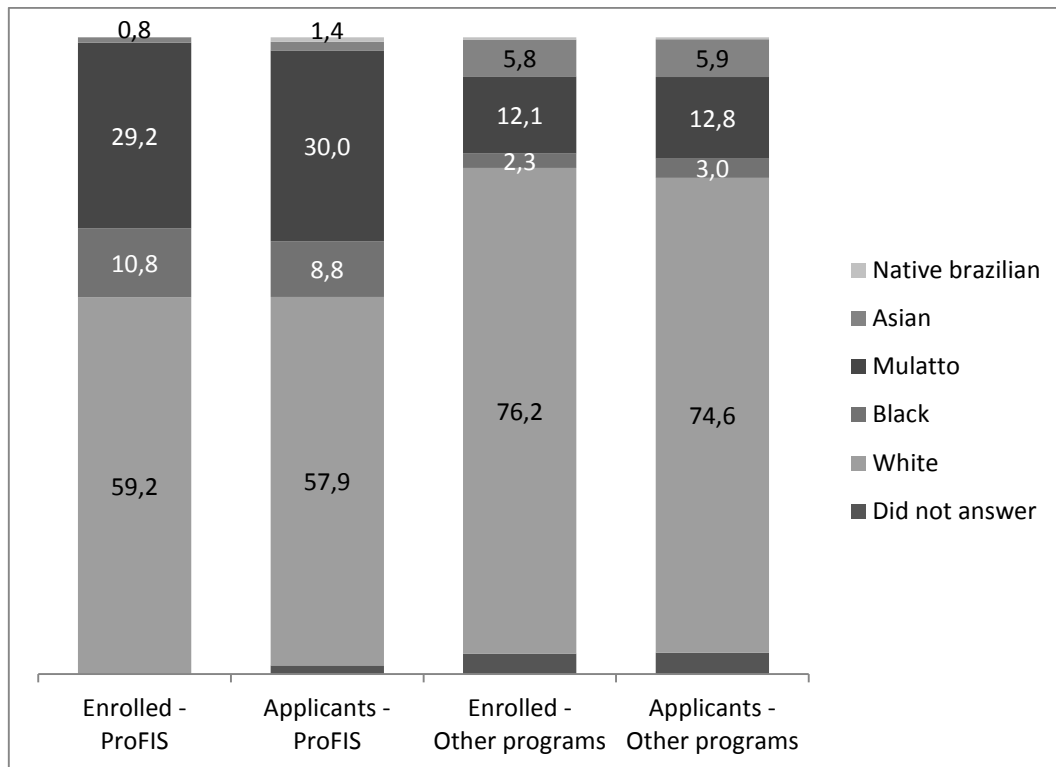


Figure 5 – Applicants and students enrolled on ProFIS and other Unicamp programs, according to the self-declared race, in percentage

One should observe that, in both admission processes, there are no significant differences between the percentages of enrolled students and applicants of each race. On the other hand, the percentage of non-white students enrolled on ProFIS (including Black, Mulatto<sup>v</sup> and Native Brazilian students) is 2.7 times higher than the percentage observed in the remaining undergraduate programs.

The percentage of White+Asian students enrolled on the remaining Unicamp programs is close to the percentage recorded for the 18-24 year old population with access to higher education in the State of São Paulo, which represents about 82% of the total, according to the 2009 PNAD<sup>vi</sup> survey (IBGE, 2009). On the other hand, the same survey reveals that 34% of the 18-24 year old population living in the state of São Paulo belongs to the Black+Mulatto ("pardo")+Native Brazilian group. Therefore, although the distribution is not uniform among the programs, on average this group is underrepresented in the university.

On the other hand, about 40% of the students enrolled on ProFIS declared to be Black, Mulatto or Native Brazilian. This percentage is higher than the figures observed for the state of São Paulo. Thus, despite being only a small group of students so far, ProFIS' admission process seems to contribute to increase the racial diversity at the university in a very effective way.

Figure 6 depicts the economic household profile of the applicants and the students enrolled on ProFIS, as well as of the 18-24 population living in the state of São Paulo, according to the monthly income and the income per capita. The figure shows the huge difference between the average *per capita* monthly income of ProFIS students and the income of the 18-24 year population with access to higher education, a clear evidence

that the admission process of the program is an effective way to improve the chances of low-income students to be admitted to higher education.

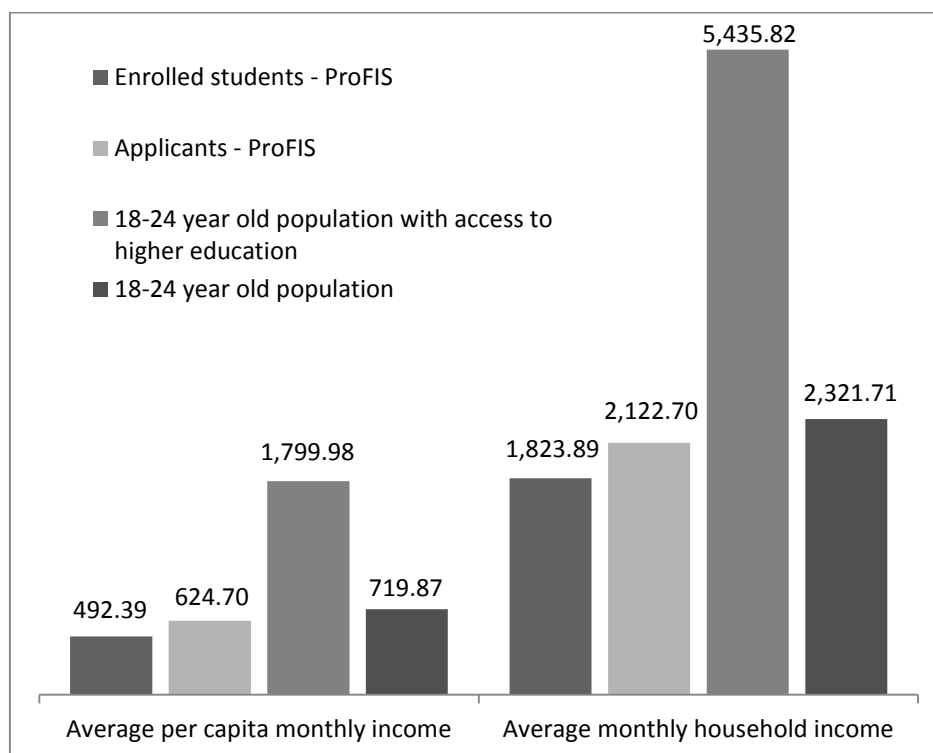


Figure 6 – Average *per capita* and household income, in Brazilian Reals

Figure 6 also shows that the average per capita income of the ProFIS applicants is 27% less than the income of the 18-24 year old population living in the state of São Paulo. Besides, if we consider only those students effectively enrolled on the program the difference rises to 31%, also demonstrating the impact of the program as an effective instrument for affirmative action.

Figure 7 shows a comparison of the monthly income of applicants and students enrolled on ProFIS and on other Unicamp programs, in Brazilian minimum wages (m.w.), from 2008 to 2010. Families with income not exceeding 5 m.w. add up to 25% of the students enrolled on other Unicamp undergraduate programs, while this group corresponds to more than 82% of students enrolled on ProFIS. The difference is even greater if we restrict our attention to families with a monthly income lower than 3 m.w. In this case, the percentage of ProFIS students is five times greater than the percentage of students that joined other programs. Furthermore, so far only one ProFIS student has declared to have a family income of more than 10 m.w., while 40% of the students enrolled on other UNICAMP programs belong to this range. Once again, ProFIS' admission system seems to be a much more progressive way of admitting low-income students to a research university like Unicamp than the traditional competition through entrance exams.

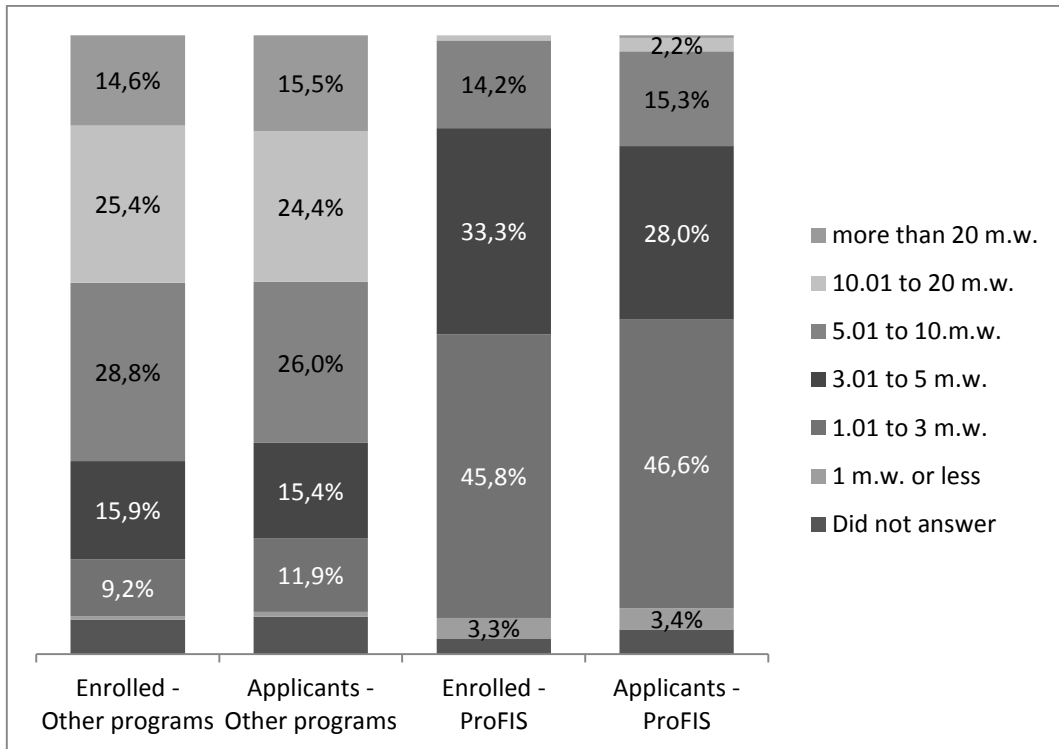


Figure 7 –Household income by Brazilian minimum wage rates, in percentage

Figures 8 and 9 depict the educational level of ProFIS students' parents. The most impressive fact shown on Figures 8 and 9 is that there is a high rate of students enrolled on ProFIS with parents that did not finish elementary school, and a quite small percentage of students whose parents attended college. These figures contrast with those for the students of the remaining UNICAMP programs, since about half of those have parents that have completed higher education. Among the 120 ProFIS students admitted in the program's first year, only 17 (14.2%) have at least one parent that attended college. Therefore, for 85.8% of the students' families this will be the first generation to enroll a higher education program.



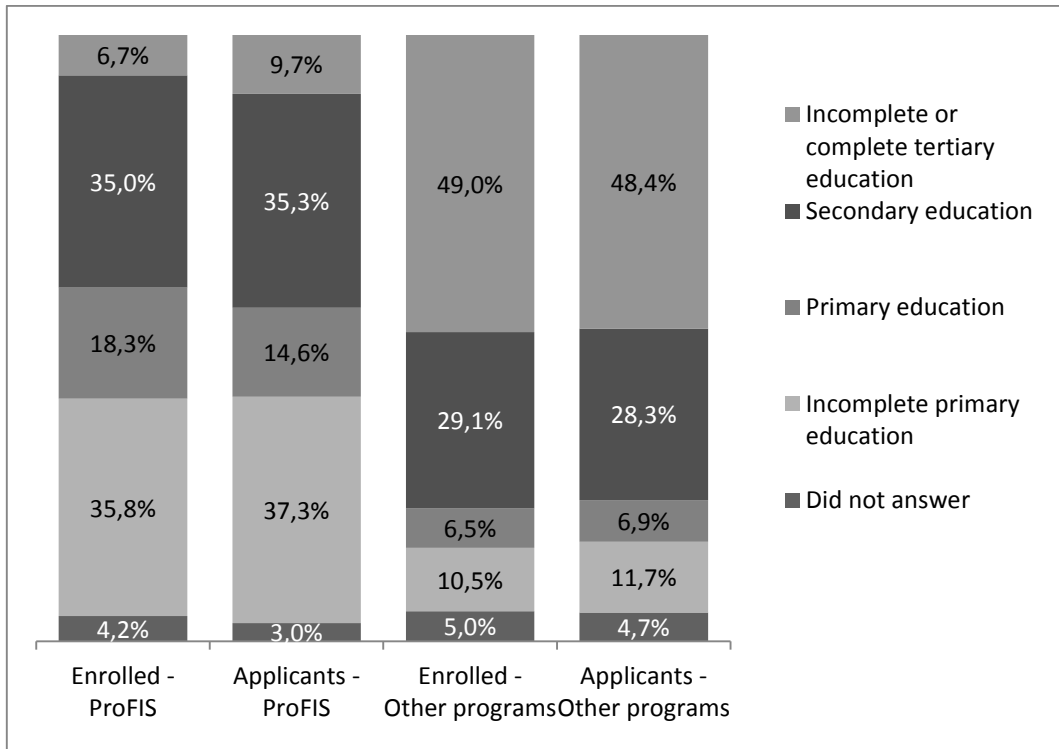


Figure 8 – Instruction level of the father, in percentage

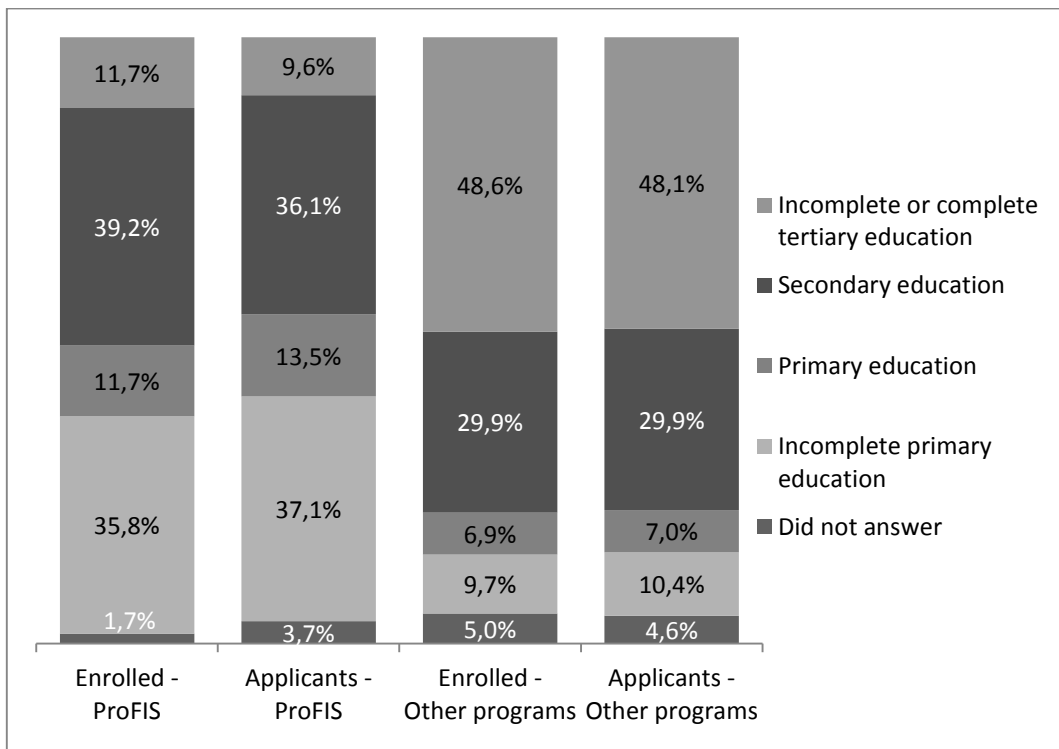


Figure 9 – Instruction level of the mother, in percentage

## Motivation for enrolling on ProFIS

A survey conducted at ProFIS' registration process contained an open question about the motivation for enrolling on the program and the expectations about the program. The answers were classified into 10 non-exclusive categories. Some of the categories are directly related to program objectives (enrolling at Unicamp, enrolling in a liberal arts program, getting support in career choice), while others reflect students' expectations about personal, intellectual and professional development. Many students also see ProFIS as a leveling program, one that will prepare them to have a good performance when they move to another Unicamp program. The categories of answers are presented in the chart below.

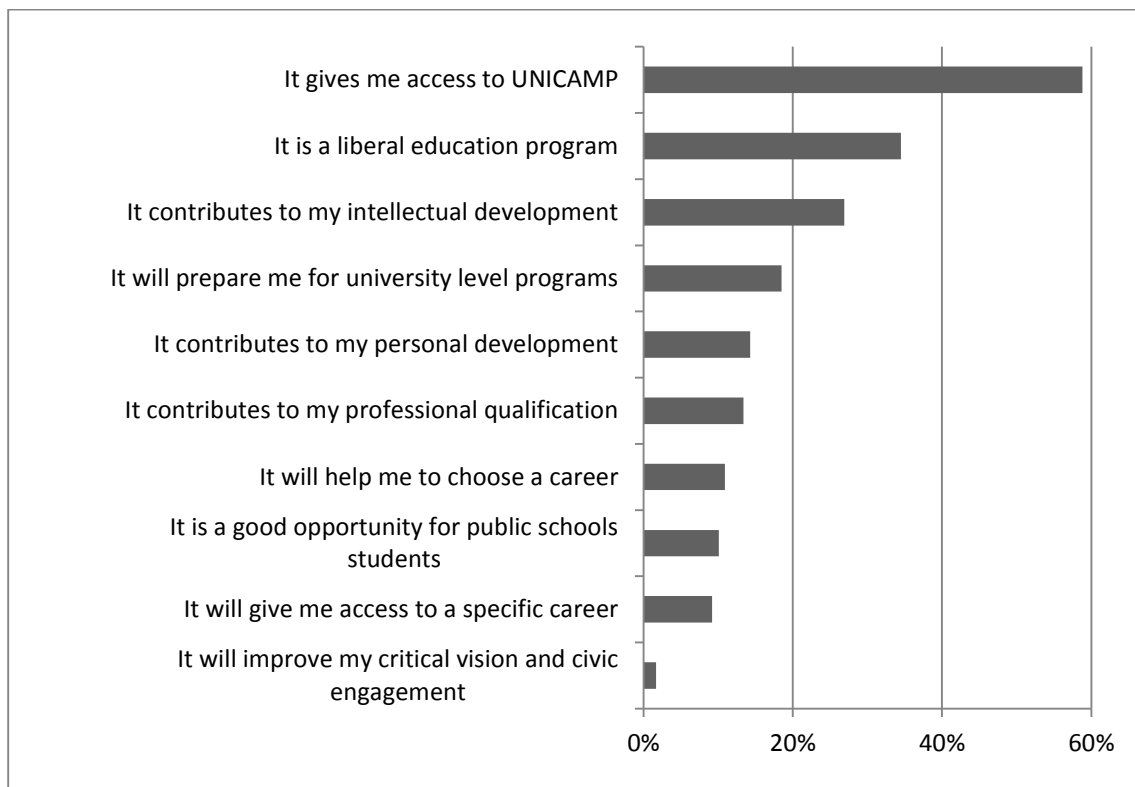


Figure 10 – Motivation in applying for ProFIS (enrolled students)

The main motivation for 59% of the enrolled students is access to Unicamp, which encompasses both the desire for enrolling on ProFIS (followed by an undergraduate program), as well as being a student at a public university. For some students, this represents the greatest opportunity to get a high quality bachelor's degree.

The second most frequent motivation (34%) was the opportunity to enroll on a liberal arts (general education) program, understood as the chance to enhance the knowledge obtained in high school through an interdisciplinary program, providing a broader professional and personal development. This set of answers points out that many students understand the nature of a general education program, an innovative concept in the Brazilian higher education system.

The third most frequent motivation, cited by 27% of the students, concerns to the development of intellectual skills, without specific connection with the general education curriculum. This category includes answers such as “ProFIS will enlarge my

knowledge” or “it will contribute to my intellectual development”. In this same sense, 14% of the enrolled students said that attending the program represents an opportunity for personal growth, understood as being more prepared for facing problems, thinking in different ways and applying acquired knowledge to personal life.

Closing the list of answers, 10% of the students also explicitly pointed out that the program is a remarkable opportunity for public high school students, while 2% said that the program improves the students’ critical vision and civic engagement.

The most relevant motivations that have no connection with the ProFIS goals is the desire to become prepared to advance to another program at Unicamp, indicated by 18% of the students. In this case, the program is seen as one that will supply the deficiencies of public high schools and help students to reach a similar educational level as that of the remaining Unicamp students. Besides, 13% of them also mentioned the contribution of ProFIS to their professional qualification.

It is also worth mentioning that only 11% of the students see the program as a support for career choice, which is explained by the fact that most of them already had a career on mind at time of registration. In fact, only 21% left blank the question "If it were to choose a higher education program at this moment, what would you choose?". Besides, 9% of the enrolled students hope that the ProFIS will help them to be admitted on specific programs, primarily medicine (which is an undergraduate program in Brazilian universities).

Since the ENEM (the national exam used to select the ProFIS students) is not related to the university's general entrance exam ("vestibular"), many high school seniors tried both tests. However, from the 731 applicants to ProFIS, 237 applied to Unicamp’s “vestibular” and only 74 (10.1%) reached the second phase of Unicamp's general entrance test. Moreover, the candidates that reached the second phase of that exam came from only 25 out of 92 public high schools in Campinas (27.2% of the total), a fact that we already knew from past editions of the exam. Fortunately, of those 74 students that managed to reach the second phase of the Vestibular, 54 (73.0%) were admitted both to ProFIS and to the other program they had applied to.

## Conclusions and comments

Increasing the chances of graduates from public high schools, where most of the socially and economically disadvantaged youngster have studied in Brazil (including those from racial minorities), of enrolling in higher education institutions and the introduction of general education programs have been two important topics in the educational agenda in Brazil the past decade. They are seen as remedies for two of the most serious problems of our higher education system: social exclusion and the extreme and early specialization of programs. The new admission process and the innovative curriculum of ProFIS are aimed to tackle these two problems at once.

At this point, we can already say that ProFIS has accomplished the task of providing access to a group of students that would not be admitted under the regular admission process used at Unicamp. The SES profile of the enrolled students is very different of that of the students admitted through the regular system. Their families belong to the lower levels of income strata, their parents have no previous college education (86%) and many (40%) declare themselves as belonging to non-White groups, a much higher rate than for the rest of Unicamp students (15%).

Regarding the curriculum aspects of ProFIS, which was not the theme of this paper, it is worth mentioning that the faculty that have participated in the program have reported the need to develop the various course syllabi with more care than usual, given the relative lower level of proficiency of students in some areas, like reading/writing and mathematics. But they have also reported a very high level of interest and dedication by the students, and their positive view of the way the program is designed, in terms of broadening their perspectives in topics that were never developed during their school years.

We still have not developed a full academic report for this first class of students, since only at the end of this year (2012) they will have concluded the program and will be in the stage of moving forward in their academic lives. That will be done next. Besides that, there is in place a very detailed evaluation system for the program, including a control group of students from other Unicamp programs, with a similar SES profile, which will include following their development after finishing their programs at Unicamp and how they fare professionally.

In the survey that the class admitted in 2011 responded at the end of their first year, the majority said that ProFIS indeed had helped them develop the general skills that are a major aspect of the program, like reading and comprehension, analytical thinking and so on. But, of course, one year is still a relatively short period for a careful analysis of development of performance in those aspects. The results will only be evident after we see how the students moving forward to regular major will perform, something that will take a few years to assess appropriately.

At the moment, we can say that the first step was taken and that Unicamp is committed to giving students all the necessary support in their path to a successful, high quality, college degree. Achieving these goals requires the continuous effort of changing our higher education model, not an easy task, but one we hope ProFIS will make more likely in the coming years.

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<sup>i</sup> Campinas is the fourteenth largest city in Brazil, and the third in the state of São Paulo, with approximately 1.08 million inhabitants. It is the thirteenth richest city in the country, concentrating 1% of the Brazilian GDP. Its metropolitan region hosts several important industries and research facilities.

<sup>ii</sup> UNICAMP is one of the three public universities maintained by the São Paulo State Government. It has 17,083 students enrolled in 66 undergraduate programs, as well as 19,718 students distributed across 66 MSc and PhD programs.

<sup>iii</sup> The University Council is the highest governance organ at Unicamp. Voting members: rector (UC's president), vice-rector and pro-rectors (undergraduate, graduate, research, development, extension), directors of schools and institutes, representatives from faculty, students and staff (all faculty members makes up for about 70% of the UC composition).

<sup>iv</sup> ENEM is a nationwide exam used in the admission process of several Brazilian universities. In 2011, about 6.2 million high schools students will take the exam, that comprises five sections: mathematics, languages, natural sciences, humanities and writing.

<sup>v</sup> In Brazil the word “pardo”, literally a color of brown-gray hue, is used in official census and documents as the general designation for people of mixed white/black ascendancy. Mulatto is used in the same context and is the best English translation of “pardo”.

<sup>vi</sup> PNAD is an annual household sample survey carried on by the Brazilian Institute of Geography and Statistics, the national statistical organization, subordinate to the Brazilian Ministry of Planning, Budget and Management.