DIFFERENCES BETWEEN LICENTIATE AND NON-LICENTIATE COURSES: A CASE STUDY OF STUDENTS WITH AND WITHOUT PROUNI SCHOLARSHIPS IN BRAZIL

Vera Lucia Felicetti
Postgraduate Education Program, La Salle University, Brazil

Abstract: With increasing access to Brazilian higher education comes increasing dropout rates in both licentiate and non-licentiate undergraduate programs. This paper reports on a comparative study of licentiate and non-licentiate undergraduate programs that enrolled students who either had or did not have a University Program for All (ProUni) scholarship. The study, conducted in 2014, analysed data on freshmen enrolled in 2005 at a non-profit higher education institution (HEI) in Rio Grande do Sul, Brazil. The study used quantitative comparative methods including descriptive and inferential statistics to analyse the data. Results indicated that graduates with a ProUni scholarship had a higher graduation rate and decreased dropout rate in both licentiate and non-licentiate degrees, p <0.0001.

Keywords: higher education, licentiate/undergraduate degree, ProUni scholarship

Introduction

In June 2014, Brazil’s National Education Plan made quality teacher education (licentiate courses) a priority for the next decade. In the Brazilian context, non-licentiate courses include: administration, agronomy, architecture and urbanism, social sciences, accounting, social communication, law, nursing, civil engineering, pharmaceutics, physiotherapy, technology, veterinary medicine, nutrition, psychology, information systems, and business. Licentiate courses include: plastic arts, visual arts, biological sciences, physical education, history, Portuguese, mathematics, pedagogy, and P.F.P.S (teacher formation program).

Research into the differences between licentiate and non-licentiate courses contributes to a deeper understanding of the sociodemographic characteristics of a country. Educational quality in the Brazilian context also is associated with its professorship. Licentiate graduate professors are professionals who taught in the early levels of education before working in Higher Education Institutions (HEIs). The National Education Plan recognized that professors with this background are useful in teacher education courses, as they are able to provide approaches to education that are relevant to and interconnected with teaching contexts outside HEIs.

This study explored the following questions: Are there differences between freshmen in licentiate and non-licentiate courses with respect to permanence and dropout, and which factors (i.e., gender, age, and scholarship status) influence these differences? Are the differences between licentiate and non-licentiate freshmen influenced by whether or not students received a ProUni scholarship? The research project was funded by a grant from Conselho Nacional de Desenvolvimento Científico e Tecnológico.

Literature Review

Comparative studies involving licentiate and non-licentiate courses are limited in the literature. Access to Brazilian universities has expanded and diversified over the years in an attempt to accommodate more students from a variety of ethnic, economic, and social backgrounds. Although these universities still have far to go, they are
beginning to recognize that social diversity at the university and increased knowledge and experience among new graduates, creates greater possibilities for social mobility and decreases the distance between social classes (Felicetti, Morosini, & Somers, 2013). On the other hand, as Felicetti et al. (2013) suggest, when social diversity is not present in the academic environment, social differences continue to increase, since students from culturally affluent families have not had, and/or do not have, much influence over the cultural and social environment they are from, and have not reflected, and/or do not reflect, on significant changes in their family environment or among their friends – that is, they contribute indirectly to society maintaining a great distance between the social classes. (p. 411)

In other words, "education is the best way to achieve social balance" (Felicetti, 2011, p. 239). Achieving this balance requires investing in the needs of the Brazilian educational system at the elementary, middle, and higher education levels. In the case of higher education, access is influenced by different factors, including national and economic development, the need for skilled manual labour, and the availability of government programs aimed at supporting access to higher education.

Federal institutions have implemented programs designed to expand opportunities to access universities. For example, the Support Program for Restructuring and Expansion of Federal Universities (REUNI) has developed new campuses by creating new HEIs in interior states and through the Open University of Brazil (UAB) (Brazil, 2007). This expansion is in line with recommendations from the United Nations Educational, Scientific and Cultural Organization (2008) as it provides teachers already working with basic education opportunities to acquire formal teaching certification. There are also subsidy programs and scholarship grants in private institutions of higher education, such as the Student Financing Fund (FIES) and the University for All Program (ProUni). FIES finances students enrolled in graduate courses at private institutions with no expectation to pay monthly fees (Brazil, 2001; Brazil, 2012). ProUni grants full or partial scholarships to students enrolled in profit and non-profit private institutions of higher education (Brazil, 2005).

ProUni was implemented as a Temporary Act on September 10, 2004. It was converted into law on January 13, 2005 under management of the Ministry of Education (Brazil, 2005). The ProUni candidate selection system is computerized, impersonal, transparent, and secure. Higher education institutions that adhere to ProUni are obligated to conform to affirmative action policies for disabled and self-declared Indigenous persons and those of African descent, as well as to ensure scholarships are divided proportionately across courses.

Student selection depends on the grade obtained in the Brazilian National Secondary Education Examination (ENEM), which is a unified selection process (Ministry of Education, 2009). Brazilians with no previous higher education may be awarded ProUni scholarships. Scholarships correspond with annual or semi-annual academic fees. Full scholarships are available to Brazilians who do not earn more than 1.5 times the minimum per capita wage. Partial scholarships (50%) are intended for those with a monthly family income of up to three per capita minimum wages. In addition, candidates need to: (a) have attended a public school or private school with a full scholarship; and/or (b) have a disability recognized under law. Students with disabilities have the right to the scholarship regardless of income, middle school quality, teacher credentials, or prior courses.
Method

This study provided a comparative mapping of students enrolled in licentiate and non-licentiate courses, and investigated differences among students with and without ProUni funding. The study is part of a larger project entitled ProUni scholarship holders and non-holders enrolled in 2005 in an institution of higher education: Where are graduates and how are they doing? The project was funded by the National Council for Scientific and Technological Development (CNPq).

The applied methodology was quantitative and comparative. It analysed the database of freshmen enrolled in 2005 in a non-profit Brazilian university in Rio Grande do Sul. This time period was chosen because 2005 was the year ProUni was introduced in Brazil. The database was provided by the institution’s Academic Registrar which contained freshmen in graduate courses enrolled in all of its campuses in 2005. In 2005, there was a total of 3,936 freshmen enrolled at the university. The independent variable in this study was course type (licentiate or non-licentiate). The dependent variables included gender, age, scholarship status (funded and unfunded), and student status (graduate, dropout, or currently enrolled).

Filtering was carried out on higher education data based on student status as of June 2014 when we began this research project. Students were divided into three categories: (a) attending (those studying, registered and transferred to the university); (b) completed (graduates); and (c) dropout (those who did not complete and were no longer enrolled). Variables included in the dropout category are the same as those considered by the HEI in question.

Data were organized initially in an Excel spreadsheet and were imported to Stata/IC13.1-Statistics/Data Analysis in which statistical and inferential analyses were carried out. Distribution tables were constructed for funded and unfunded students in relation to whether they were enrolled in licentiate or non-licentiate courses. Chi-squares ($\chi^2$) were calculated to test associations between belonging to licentiate or non-licentiate courses, as well as scholarship status (funded or unfunded), gender, and student status (graduate, dropout, or currently enrolled). Since the Brazilian education system allows students to access higher education at different ages, and because age can inform students’ experiences (Felicetti, 2014; Felicetti & Fossatti, 2014), age was an important variable in this study. The mean age of licentiate and non-licentiate students was compared and tested using an independent sample $t$-test. Gender, age, and scholarship status across course type were considered as factors affecting dropout and were tested using logistic regression. Significance levels followed Bós (2004) guidelines, with less than 5% probability of chance ($p < 0.05$) being considered significant, and between 5% and 10% ($0.05$ and $0.10$) being considered as approaching significance (Wood, Freemantle, King, Nazareth, & Irwin, 2014).

Findings

Of the 3,936 freshmen in higher education in 2005 at the HEI in question, 2,437 (61.92%) belonged to non-licentiate courses, and 1,499 (38.08%) belonged to licentiate courses. In non-licentiate courses, 91.92% were unfunded, while in licentiate courses 90.33% were funded (Table 1).
Table 1
Number of Funded and Unfunded Freshman by Program Type (2005)

<table>
<thead>
<tr>
<th>Funding</th>
<th>Non-licentiate</th>
<th>Licentiate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N(%): 2,240 (91.92)</td>
<td>N(%): 1,354 (90.33)</td>
</tr>
<tr>
<td>Unfunded</td>
<td>197 (8.08)</td>
<td>145 (9.67)</td>
</tr>
</tbody>
</table>

**Note.** Database provided by the institution’s Academic Registrar.

Table 2 displays enrolment data from 2005 of freshmen in licentiate and non-licentiate courses, whether or not they were ProUni scholarship holders, and their classification by sex. The total female freshmen percentage was 59.27%. This finding is in line with those presented by Sisprouni (2015), which indicated that female scholarship holders comprised 53% of funded students until the second half of 2014.

Table 2
Number of Funded and Unfunded Freshman by Program Type and Sex (2005)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Non-Licentiate</th>
<th>Licentiate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unfunded N(%): 1,134 (50.63)</td>
<td>N(%): 971 (71.71)</td>
</tr>
<tr>
<td></td>
<td>Funded N(%): 125 (63.45)</td>
<td>N(%): 103 (71.03)</td>
</tr>
<tr>
<td>Female</td>
<td>1,134 (50.63)</td>
<td>971 (71.71)</td>
</tr>
<tr>
<td>Male</td>
<td>1,106 (49.38)</td>
<td>383 (28.29)</td>
</tr>
<tr>
<td></td>
<td>72 (36.55)</td>
<td>42 (28.97)</td>
</tr>
</tbody>
</table>

**Note.** Database provided by the institution’s Academic Registrar.

Table 2 also shows that the percentage of unfunded women in non-licentiate courses (50.63%) was lower than unfunded women in licentiate courses (71.71%). However, for women with ProUni funding the subtotal was 63.45%, meaning that the proportion of funded women in non-licentiate courses is 12.82% higher than those without funding for these courses. Accordingly, the percentage of funded men (36.55%) is lower than those not funded (49.38%). Among the licentiate courses the percentage of funded and unfunded men and women was similar with less than 1% difference (71.71-71.03=0.63).

The Chi-squared test of the results presented in the category of non-licentiate courses revealed statistical significance, $p = 0.0007$. As for licentiate courses, this association also was significant, $p = 0.0003$. Women (funded and unfunded) comprised the majority in licentiate courses. This shows more women students from minority groups. Felicetti and Morosini (2009) identified minority groups as those who experience disadvantages with respect to gender, socioeconomic status, race, culture, disability, place of residence, and age and those who enter courses that have typically been sought out by males (non-licentiate).
Table 3

Average Age of Unfunded and Funded Students in Licentiate and Non-licentiate Courses

<table>
<thead>
<tr>
<th>Funding</th>
<th>Non-licentiate</th>
<th>Licentiate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfunded</td>
<td>24.4263</td>
<td>25.9911</td>
</tr>
<tr>
<td>Funded</td>
<td>20.1786</td>
<td>21.0966</td>
</tr>
</tbody>
</table>

*Note.* Database provided by the institution’s Academic Registrar.

Students who received ProUni funding had the lowest average age in both the licentiate and non-licentiate categories (Table 3). Independent t-tests comparing mean age between funded and unfunded students in non-licentiate courses was 7.32 (df = 2434), *p* < 0.0001. In the same test for licentiate courses the calculated t-test was 6.43 (df = 1494), *p* < 0.0001. This finding suggests that younger people were able to access higher education through the University for All Program.

Table 4 presents the status of freshmen from 2005 in June 2014. Total percentage of graduates comprised 37.42% of the 3,936 freshmen. Among the graduates of non-licentiate courses, 32.28% did not have ProUni funding while 68.02% of graduates did have ProUni funding in these courses. In licentiate courses, 37.15% of graduates did not have ProUni funding and 77.93% had funding.

Of the total number of freshmen in 2005 only 1.45% were still attending college in 2014, with the highest percentage in the non-licentiate courses. Of these, 2.10% were unfunded and 0.51% were funded. In licentiate courses, 0.66% were unfunded while no ProUni funded students were still attending licentiate courses.

Students in the dropout category met HEI criteria but did not register or did not return after leaving or cancelling a course. The total number of dropouts was 2,406, which comprised 61.13% of the total freshmen in 2005. In non-licentiate courses, 65.63% of unfunded students dropped out compared to 31.47% of funded students. In licentiate courses, 62.19% of unfunded students dropped out compared to 22.07% of funded students. The percentage of funded graduates was higher in licentiate courses (77.93%) compared to non-licentiate (68.02%), with more students holding ProUni scholarships graduating in both course categories. Among funded students in non-licentiate courses, the percentage of graduates was 68.02%; among funded students in licentiate courses the graduate percentage was 77.93%. ProUni funded students dropped out less frequently than unfunded students.

The Chi-squared tests for graduation and dropout rates for funded and unfunded students were statistical significance for both non-licentiate and licentiate courses, *p* = 0.0001 ($\chi^2 = 101.7089$ for non-licentiate courses and $\chi^2 = 90.1239$ for licentiate courses respectively). This indicates that funded students graduate from higher education institutions at a higher rate and dropout less frequently than unfunded students.
Table 4
**Status of 2005 Freshmen in June 2014**

<table>
<thead>
<tr>
<th>Status</th>
<th>Non-Licentiate</th>
<th>Licentiate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unfunded N(%)</td>
<td>Funded N(%)</td>
</tr>
<tr>
<td>Graduate</td>
<td>723 (32.28)</td>
<td>134 (68.02)</td>
</tr>
<tr>
<td>Studying</td>
<td>47 (2.10)</td>
<td>1 (0.51)</td>
</tr>
<tr>
<td>Dropout</td>
<td>1,470 (65.63)</td>
<td>62 (31.47)</td>
</tr>
</tbody>
</table>

*Note.* Database provided by the institution’s Academic Registrar.

Table 5 presents the logistic regression used to access the odds of being a drop out student according to sex, age group, course type and scholarship status. Age was grouped according to the National Education Plan (Ministry of Education/ Secretariat of Articulation with Teaching Systems, 2014). Females, students younger than 18 years old, non-licentiate, and unfunded students were used as reference levels; males’ odds were calculated compared to female students and all other groups were compared to students 18 years old in both licentiate and non-licentiate programs, and finally with and without funding.

According to multilevel logistic regression that adjusted for each of the variables in the model (Table 5), men were 22.55% more likely to drop out than women, *p* = 0.0040. For age group, comparisons were performed using the younger group as reference. Thus, it is observed that all age groups older than 18 years had significantly greater chance of dropping out, with those in the 25-35 age group having the highest chance of dropping out.

Table 5
**Multilevel Logistic Regression for Student Drop Out According to Gender, Age, Degree Type, and Scholarship Status**

<table>
<thead>
<tr>
<th></th>
<th>Odds Ratio</th>
<th>Confidence Interval (95%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.2255</td>
<td>1.067</td>
<td>1.4073</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 18</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal to 18 and less than 25</td>
<td>1.8509</td>
<td>1.492</td>
<td>2.2960</td>
</tr>
<tr>
<td>Equal to 25 and less than 35</td>
<td>2.3964</td>
<td>1.873</td>
<td>3.0660</td>
</tr>
<tr>
<td>Equal to 35 and lower than 45</td>
<td>1.5846</td>
<td>1.192</td>
<td>2.1064</td>
</tr>
<tr>
<td>Higher or equal to 45</td>
<td>1.9409</td>
<td>1.287</td>
<td>2.9266</td>
</tr>
<tr>
<td>Licentiate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.8602</td>
<td>0.748</td>
<td>0.9885</td>
</tr>
<tr>
<td>Funded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.2473</td>
<td>0.192</td>
<td>0.3186</td>
</tr>
</tbody>
</table>

*Note.* Database provided by the institution’s Academic Registrar.
Licentiate course students were 14% less likely to drop out compared to non-licentiate students (Table 5). When comparing students who were funded with those who were not, it is clear that scholarship holders were 75% less likely to drop out, \( p < 0.0001 \).

**Discussion and Conclusion**

The following questions were investigated in this research study: (a) Are there differences between freshmen in licentiate and non-licentiate courses with respect to permanence and dropout, and which factors (i.e., gender, age, and funding) influence this difference? and (b) Are there differences between licentiate and non-licentiate freshmen and among funded and unfunded students with respect to permanence and dropout? The results indicated that the highest percentage of freshmen were in non-licentiate courses. These findings corresponded with recent Census data on higher education in Brazil (Sinopse Estatística da Educação Superior, 2013). This finding may be due to the increasing amount of non-licentiate courses being offered at universities in Brazil.

In 2005, 17 non-licentiate and nine licentiate courses were offered at the university. Each licentiate course had an average enrolment of 167 freshmen and each course was offered at the different campuses. For non-licentiate courses, there was an average enrolment of 144 students. Although the distribution of freshmen is not uniform between courses, it is evident that licentiate courses were in higher demand, as more freshmen were enrolled in physical education, pedagogy, Portuguese and biological sciences. In 2005, Census data indicates that the pedagogy course was among the most sought after in the field of education. Among non-licentiate courses offered in 2005, the courses with the highest number of freshmen were administration, law and accounting sciences. These data are in line with those presented in the 2005 Census on Higher Education, which found that administration and law were the two most sought-after courses which was the same result in the 2013 Census (Sinopse Estatística da Educação Superior, 2005, 2013).

Despite a decline in the teaching profession over the years, the current study found that a higher number of students entered licentiate courses compared to other courses. The amount of ProUni scholarships was calculated according to the number of paying students enrolled in each HEI; Institutions that adhered to the University for All Program offered at least one full scholarship for every nine paying students enrolled at the end of the previous school year (Brazil, 2005). Given this stipulation, the percentage of funded students in this HEI is close to the maximum 10% allowed by law. Thus, vacancies occupied by ProUni scholarship holders are in alignment with vacancies offered.

Data shows that freshmen in 2005 at this HEI had a greater number of women enrolled at this level of education. These findings are supported in Brazilian statistics (Sinopse Estatística da Educação Superior, 2013). In recent years, women’s participation in higher education has increased. This increase is related to shifts in female representation in Brazil (Romanelli, 2010) that have provided women with greater opportunities to participate in the labour market, in politics, and in other fields that demand higher qualifications, including university education (Aguiar et al., 2011).

Analyses presented here related to sex also show that in non-licentiate courses, while the difference between non-scholarship holders was 0.25%, the difference between scholarship holders was 12.79%. These findings suggest that the provision of ProUni scholarships increased the representation of
women in courses traditionally attended by men.

The average age of freshmen who were enrolled in non-licentiate and licentiate courses in 2005 differed significantly by category, indicating that the University for All Program facilitated the entry of younger people in higher education. These data are consistent with those presented in the Higher Education 2013 Census, which indicates that most freshmen are under 25 years old. In addition, these data meet Target 12 of the National Education Plan (PNE), approved on June 25, 2014, which aimed to increase the gross enrolment rate in higher education to 50% within the next decade and increase the net rate of 18- and 24-year olds attending university to 33% (Brazil, 2014).

Graduates with scholarship funding represented the highest percentage of graduates in both licentiate and non-licentiate courses. Studies by Regueyra (2013), Vitelli (2012), and Castaño, Vásquez, Gallón, and Gómez (2012) found that having some financial aid during graduation contributes to academic success.

Funded students had a lower dropout rate and higher graduate rate than unfunded students in both licentiate and non-licentiate courses. These data are in line with a study conducted by Felicetti and Fossatti (2014) who found a lower dropout rate among those with ProUni scholarships than those without scholarships in licentiate courses. The findings of this study also indicated that men were more likely to drop out than women, which is consistent with findings reported by Burillo, Arriaga, Carpeño, and Casaravilla (2011). Age was also related to dropout, with younger students less likely to leave school than older students. Studies by Fiori and Ramirez (2013), Burillo et al., (2011), Oloriz and Fernandes (2013), and Vitelli (2012) also indicated higher risk of dropout for older students.

Students in licentiate courses were also less likely to dropout than their colleagues in other courses, a finding consistent with research by Felicetti and Fossatti (2014). The results of this study suggest that at the university in focus non-licentiate courses were more diverse, but the demand was higher for licentiate courses. The demand for licentiate courses raises several questions including: Has teaching devaluation influenced course choice by the time of university entrance? What factors guide students’ course choices? Moreover, as dropout was higher among freshmen in non-licentiate courses, it is appropriate to ask: Why is drop out in those so called prestigious courses (non-licentiate) higher than in licentiate courses? These questions can be considered as recommendations for new research projects.

Although ProUni has worked to increase overall graduate percentages and decrease overall dropout percentages at the university explored in this study, the question of dropout remains a concern. Dropout rates were found even among students with a scholarship. In summary, disregarding the fact that only 1.45% of students who enrolled in 2005 remained by the time of this research, it is observed that more than 60% of freshmen dropped out of the HEI. This finding highlights the need for the institution to develop studies that address the factors that contribute to dropout at both the HEI and in higher education broadly.
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(References translated using Google Translate)


[Planning the next decade knowing the 20 goals of the National Education Plan].


**Author**

*Vera Lucia Felicetti* holds a PhD in Education and received doctoral training at the University of Texas UT/PUCRS. She also holds an academic degree in Mathematics and a master's degree in Science and Mathematics Education. Felicetti’s doctoral dissertation has received several honours, including the CAPES award for best thesis in the country. She is currently a Professor in the Graduate Studies of Education program at Unilasalle, Brazil, and is a Visiting Scholar at the University of Maryland, College Park, USA. Felicetti can be reached at vera.felicetti@unilasalle.edu.br