

Job Initiation for Teachers: Is it a Missing Opportunity for Initial Teacher Training?

Inserción laboral docente: ¿una oportunidad perdida para la Formación Inicial Docente?

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Abstract

This research shows a depiction of the first years of working career of school teachers, using data from graduates' records, and the official teacher registration of the Ministry of Education. Some of the findings of this research stand on the fact that most of the Education Careers Graduates join to the labor market as teachers (79%), and from this group 65% do it in a permanent way. The teaching career attracts and retains mainly women and teachers from a lower social class. Meanwhile, teachers with the best academic performance are more likely to be employed permanently instead to be employed temporarily. And for graduates from non-traditional institutions and low years of accreditation is more likely not to have access to schools than graduates of traditional institutions, but when this first group achieved to get into the classroom, they probably to stay on it. Finally, it seems this differences are not enough to keep away the *best candidates* from schools; so it would not be a lost opportunity for Initial Teacher Training (ITT) in terms of the efforts made for attracting the best to the teaching profession.

Keywords: teaching career, initial teacher training, teacher abandonment

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Resumen

Este trabajo expone una caracterización de los primeros años de la carrera laboral docente a partir de la combinación de los registros de titulados de carreras de educación y el censo de docentes del Ministerio de Educación (Mineduc). Se destaca que la mayoría de los titulados ingresa a la carrera laboral docente (79%), de los cuales un 65% lo hace de forma permanente. Se observa, además, que la carrera docente atrae y retiene principalmente a mujeres y a quienes provienen de un origen social más bajo. Por su parte, quienes presentan el mejor desempeño académico tienen más posibilidades de insertarse de forma permanente que de forma transitoria. Y para los titulados de instituciones no tradicionales y de baja acreditación, es más probable la no inserción que para los titulados de instituciones tradicionales, pero cuando los primeros ingresan al aula, tienen mayores posibilidades de permanecer en ella que de abandonarla. Pareciera que estas diferencias no van en la dirección de apartar a los *mejores candidatos* de la docencia, y en este sentido, no sería una oportunidad perdida para la Formación Inicial Docente (FID) en términos de los esfuerzos que hoy se realizan para atraer a los mejores a la docencia.

Palabras clave: carrera docente, formación inicial docente, abandono de la docencia

The early years of the teaching career are marked by the passage from the higher education system to the labor system. To inquire into this transition is relevant to the extent that there is abundant evidence regarding the difficulties faced by novice teachers at this stage of their career, which has a direct impact on their future performance. In addition to the consequences on an individual level, this transition stage between initial training and the career has an important effect on the allocation of teachers with different skills in different types of schools, and the possibility of leaving early the teaching career.

Regarding the distribution of the teachers in the school system, various studies have demonstrated a systematic distribution of the less qualified teachers in more vulnerable schools (Lankford, Loeb, & Wyckoff, 2002; Ortúzar, Flores, Milesi, & Cox, 2009). What is remarkable is that this distribution is seen not only from the first employment experiences of teachers (Boyd, Lankford, Loeb, & Wyckoff, 2005; Cabezas, Gallego, Santelices, & Zarhi, 2011), but also it is noted that these differences are more pronounced over time to the extent that teachers with low ratings are inserted in low-income and low-performance schools and are more likely to stay in this type of schools than the more qualified teachers and, on the contrary, if they are incorporated into high income and high performance schools, they are less likely to remain in these classrooms than teachers of higher qualifications (Rivero, 2012). Thus, the study of the first working experience provides evidence in this topic, being a key element to explain the fate of the teachers in their future path.

On the other hand, the school culture maintains certain dynamics that hinder the socialization of the novice teachers in the school environment. In fact, many authors point out that at this stage the novice teachers are experiencing a *strong impact with the reality*, because from one day to another he/she must assume the same responsibilities as a teacher with experience, having a greater oversight on the part of the authorities, receiving lower wages than their colleagues, exposed to a greater instability and, in addition, without the necessary support to deal with this stage. It is no coincidence that some people may say that in this period there are two options: “sink or swim” (Lortie, 1975, p. 59). Some researchers also point out that these early experiences in the classroom are fundamental to the training of teachers’ identity, beliefs regarding teaching and learning, the perception of self-efficacy and a desire to remain or not in the classroom (Avalos & Bascopé, 2014; Chong & Low, 2009).

In addition to this, and while “the measure of the quality of an education system is in the quality of their teachers” (Barber & Mourshed, 2008, p. 14), in many countries the teaching profession lacks prestige, and coupled with its low wages, it has caused the teaching career to be unattractive for people who have an academic talent in accordance with the challenges of education today, providing also the early abandonment of teaching (OCDE, 2009; Valenzuela & Seville, 2014).

Looking at the Initial Teacher Training (ITT), it is necessary to highlight the sustained growth of pedagogy careers in recent decades (Brunner, 2009; PNUD, 2006). More precisely, during the period

2000-2008 enrollments in higher education underwent the most accelerated expansion of its history. However, Cox, Meckes and Bascope (2010) show that growth was more pronounced in the case of careers in education, whose enrollment is multiplied by a factor of 2.6 while enrollment for higher education in general only doubles. These researchers indicate also that there are a large diversity and number of initial training programs, which increased nearly 200% in the period 2000-2008 and reached 738 training programs in elementary and secondary education (Cox, Meckes, & Bascope, 2010, pp. 210-211). The importance of this point is that expansion of the ITT has a direct impact on the possibilities for insertion of new teachers, and if it is not correlated to the real needs of the school education system.

Combining the aspects listed above, it is appropriate to go deep into the employability of those who have recently graduated from education, investigating into *who* is joining the teaching profession, *who* is not doing it despite having received teacher training, and *how permanent* is the insertion in the educational system, thus giving an early look at the early working years of teachers.

For the Chilean case, there is little evidence on the magnitude and characteristics of the teaching career graduates that fall within and outside of elementary and secondary education. According to a report by the Center for the Study of Mineduc 51% of the teaching career graduates in 2007 were in the Ministry records in 2008, a figure that gradually increases until it reaches a total of 64% in 2011 (Mineduc, 2012, p. 3). This shows that, 4 years after graduation, 36% of those who followed the initial teacher training and graduated the year 2007 was not working in elementary and secondary education.

The number of teachers who have not been occupationally inserted in elementary and secondary education is alarming to public policy, to the extent that for years the government have made efforts to attract the best candidates to teaching and improve initial teacher training. That is why the question is obvious: *does non-inclusion represent a missed opportunity for the ITT?*

Under these premises, the present study aims to characterize the insertion and the early years of the working career of education graduates between the years 2007 and 2011. In more specific terms, this study will focus in the profile description of education graduates between the years 2007 and 2011 on the basis of demographic characteristics, origin, academic, and initial training. Second, it will analyze the effect of the demographic characteristics, academic, and initial training on the likelihood of being occupationally inserted in the educational system. And finally, we will analyze the effect of this same set of characteristics on the probability of being permanently or temporary inserted, or about the possibility of leaving the teaching career.

Data and methodology

The unit of analysis corresponds to graduates in education, those who were identified from the databases of higher education graduates between 2007 and 2011. These data were obtained from the Information System of Higher Education (SIES for its initials in Spanish). For the purposes of this research, all graduates from undergraduate education were selected that worked at an elementary and secondary education.¹ In Table 1 the total of identified cases are presented, with a total of 53.459 cases distributed in 5 cohorts of graduates.

¹ It has been excluded from the analysis graduates from: Early Childhood Education, Pedagogy in Differential Education, Technical Assistant of the Early Childhood Educator, Technical Assistant of the Educator of Differential Education and Technical Education in Sports, Recreation and Physical Preparation. In addition, the records of graduates in the area of education contain careers that are not part of this research, for example, a Football Referee, Interpreter in Sign Language or Physical Trainer, cases that were also eliminated from the analysis.

Table 1
Case distribution according to the graduation year

Year of graduation					
2007	2008	2009	2010	2011	Total
8.904	10.157	11.433	11.859	11.106	53.459

Note: Source: Own elaboration based on the records obtained from Mineduc, Department of Evaluation, Measurement and Educational Registry (DEMRE for its initials in Spanish), and SIES.

In order to reconstruct the academic and occupational career of education graduates, four major groups of variables have been identified. The first corresponds to demographic characteristics (gender, age, and geographic location) that were part of the original database (graduates).

The second group of variables corresponds to the academic background and the original features of the graduates, information that was extracted from the databases of tests for admission to the university (Academic Aptitude Test [PAA for its initials in Spanish] and the University Selection Test [PSU for its initials in Spanish]). The secondary grade point average (NEM for its initials in Spanish), the Language and Math test scores are used as academic background of the graduates. For its part, the record of the PSU enable to identify the secondary education graduation institution, and show how segregated is the Chilean educational system, working as a good indicator of socio-economic background of the graduates.

A third group of variables corresponds to structural features of the institutions of higher education, information that was obtained from the web sites of the SIES and of the National Council of Accreditation (CNA for its initials in Spanish).

Finally, a fourth group of variables correspond to the characteristics of the insertion and employment history, obtained from the concatenation of the databases of teaching positions in the years 2005 to 2013², corresponding to a census of teachers at the national level.

The end result is a complete academic and work history of 5 cohorts of graduates. These data allow in the first place, to identify if graduates were incorporated or not occupationally to elementary and secondary educational institutions in the period 2005-2013. Second, it allows us to identify how much time has elapsed between the graduation and job insertion. And finally, allows us to obtain a complete work history of the recent graduates in education, their labor history that ranges between 0 and 9 years of experience, as well as identifying the possible abandonment of teaching in elementary and secondary schools.

In terms of technical analysis, it has been carried out: a descriptive analysis of contingency tables to account for the graduates' profile; models of binary logistic regression to analyze the probability of having been inserted occupationally; and multinomial logistic regression models to analyze the probability of insertion according to different modalities of permanence in the educational system.

Results

Below are the results of this study presented in three sections, which account for the three objectives mentioned above. In the first section the profiles of the education career graduates are presented based on their demographic characteristics and social origin, their academic background, and the characteristics of their initial teacher training. Then we present the analysis of the probability of having been occupationally inserted on a teaching career, and the probability of having been inserted permanently or temporary or abandoning the teaching career according to demographic characteristics and social origin, academic background and characteristics of the initial teacher training.

² Although the first cohort graduated in 2007, we have worked with data from the work history prior to this year. This methodological decision is the result of the identification of the phenomenon of employment prior to the certification, i.e., there are teachers carrying out the teaching that have not graduated yet from education. It should be noted that the proportion of graduates who starts to teach before graduation does not exceed 12%.

Profile of education graduates between 2007 and 2011

This section deals with the first objective, that is, to describe the profile of education graduates between 2007 and 2011 based on demographic, origin, academic courses and initial formation characteristics.

With respect to demographic characteristics, it stands out that 68% are females, nearly two-thirds graduated before the age of 26 and 80% were single at the time of graduation. On the other hand, most of the graduates left institutions located in the Metropolitan Region (RM for its initials in Spanish) (38%), VIII Region (15%) and V Region (13%), recognized as three main centers of university training in Chile. The large proportion of RM graduates could be translated into an excess of labor supply of teachers, which could certainly hinder the insertion in the Metropolitan Area.

Table 2
Case distribution according to demographic variables, social origin, academic background, ITT structural variables and ITT program variables

		%	N
Demographic variables			
Region of graduation institution	North zone (XV, I, II, III, IV)	11,8%	6.306
	V Region	13,0%	6.932
	RM	38,3%	20.454
	Central zone (VI, VII)	7,0%	3.724
	VIII Region	15,2%	8.137
	South zone (IX, XIV, X, XI, XII)	14,8%	7.906
Gender	Male	32,3%	17.273
	Female	67,7%	36.186
Marital status	Single	80,1%	26.253
	Married	19,0%	6.220
	Divorced	0,9%	292
	Widow	0,1%	20
Year (at graduation)	<= 24	34,6%	18.489
	25-26	24,6%	13.166
	27-30	23,1%	12.345
	31+	17,7%	9.459
	Average	26,95	
Social origin variables*			
Socioeconomic group of the secondary education graduating institution	Low (A+B)	49,1%	10.897
	Medium (C)	32,9%	7.316
	High (D+E)	18,0%	3.993
Dependency and copayment of secondary education graduating institutions	Public	46,1%	10.234
	Private Subsidized with copayment	41,7%	9.265
	Private Subsidized without copayment	6,6%	1.467
	Private paid	5,6%	1.236
Variables of academic background**			
PAA or PSU NEM	Quintile I (20% inferior)	496 or less	9.634
	Quintile V (20% superior)	642 or more	8.019
PAA or PSU Math	Quintile I (20% inferior)	442 or less	8.619
	Quintile V (20% superior)	620 or more	8.694
PAA or PSU Language or verbal	Quintile I (20% inferior)	441 or less	8.356
	Quintile V (20% superior)	609 or more	8.847

<u>Structural variables of ITT</u>			
Type of institution	CRUCH	53,6%	28.674
	No CRUCH	41,1%	21.990
	IP-CFT	5,2%	2.795
Years of accreditation (by December 30, 2012)	0	16,5%	8.844
	2	18,3%	9.760
	3	7,2%	3.848
	4	25,9%	13.836
	5	19,2%	10.266
	6	10,1%	5.423
	7	2,8%	1.476
Type of institution FID	CRUCH high accreditation (5-7 years)	22,4%	11.956
	NO CRUCH high accreditation (5-7 years)	9,5%	5.088
	IP-CFT high accreditation (4-7 years)	1,6%	848
	CRUCH low accreditation (0-4 years)	31,3%	16.718
	NO CRUCH low accreditation (0-4 years)	31,6%	16.902
	IP-CFT low accreditation (0-3 years)	3,6%	1.941
	<u>Variables of ITT programs</u>		
Type of study	Daytime	82,9%	44.339
	Evening	14,1%	7.533
	Distance, mixed mode	3,0%	1.587
Type of career plan	Regular plan	88,6%	47389
	Special plan	11,4%	6070
Total duration of the career	1-7 semesters	7,3%	3.860
	8 semesters	21,68%	11.504
	9 semesters	25,85%	13.719
	10 semesters	34,57%	18.348
	11-16 semesters	10,6%	5.637

Note: As an indicator of social origin we have used the characteristics of the graduating institutions of the high school graduates, counting only with information for those who gave the PSU or are in the records of the RECH³ after the year 2003.

³ The information presented corresponds to the boundaries of the quintiles. Quintiles II, III and IV have been omitted.

Source: Own elaboration based on records of MINEDUC, DEMRE and SIES.

In terms of social origin, a little less than half of graduates studied in public or municipal high schools (46%) and in low socio-economic group institutions (49%). Only 6% completed secondary education in paid high schools and only 18% from the high socio-economic group did so, proportion that will probably choose traditional careers such as Medicine or Law.

The graduates' academic background was obtained from scores in the admission test to enter higher education (PAA and PSU).⁴ Based on those who graduated from education, and not from those who entered in to teaching careers, it is possible to point out that the average score obtained in the PAA's Verbal was 524 points, while for the mandatory Math test was only 506 points. With respect to those who took the PSU, their Language test average score was of 522 points, and in the Math test only 503. If we

³ Chile's Students Records (RECH for its initials in Spanish).

⁴ The cases in this study are not affected by public policies that have sought to increase the average scores for admission to the career of pedagogy. Therefore the trends exposed may vary in the future if the Teaching Vocation Scholarship achieves a great impact over time.

look to the ends of the distribution, the top quintile earned scores that exceed almost 600 points, while the bottom quintile does not reach 500 points. Thus, 60% of the central data received scores ranging between 500 and 600 points, approximately.

More than half of all graduates attended ITT in institutions belonging to the Council of Rectors of Chilean universities (CRUCH) or traditional universities, while 2 of every 5 graduates studied in institutions that do not belong to the CRUCH, and only 5% studied in Professional Institutes. With respect to the accreditation of institutions,⁵ one of every three students graduated from institutions that have between 0 and 2 years of accreditation—to December 2012—and only 3% studied in institutions that received the maximum accreditation possible (7 years). This gives an account that whether the institutions are traditional or not, the focus of initial teacher training is in institutions with low levels of accreditation.

Examining the programs of study, we observed that 83% of graduates had completed daytime programs, and 89% followed a regular plan, while 71% of graduates took programs that had duration of 9 semesters or more. Thus, only a small proportion of graduates come from special, regulated, rapid or short programs.

Insertion and no insertion in the teaching career

The next section examines the proportion of graduates that incorporate into the teaching career, providing additional evidence on the effect of the demographic characteristics, academic, and initial training on the probability of occupationally insertion to the educational system.

During the period 2007-2011, 79% of education graduates had entered to the teaching career, or at least once they have taught at the elementary or secondary education level (it is possible to see these cases in the records of the teacher census between 2005 and 2013). On the other hand, 21% of graduates were not in the Mineduc records, so it is possible to conclude that they have not taught at the elementary and secondary level.⁶ The number of graduates inserted in the system is greater than reported by Mineduc (2012), which may be the result of some methodological decisions of this research, that were intended to remove records of graduates of education careers that possibly have no interest in teaching in elementary or secondary education.⁷ On the other hand, the period of observation of working trajectories is longer than the one reported by Mineduc: while in this report 4 years of possible labor insertion is presented, this research allows observing a minimum of 3 and a maximum of 7 years in which entering classrooms can occur.⁸ This last point increases the chances of observing an education graduate inserted occupationally, since entering the labor market is not necessarily immediately after graduation.

To account for the characteristics that differentiate those who are inserted to the teaching career of those who do not, we have developed a binary logistic regression model estimated in blocks, presented in Table 3.

⁵ In Chile there is an accreditation process that aims to certify the careers and programs quality offered by the institutions of higher education. This process is mandatory for the careers of Pedagogy and Medicine. Completed the accreditation process, the National Accreditation Commission (CNA) determines whether there is merit to the accreditation. When there is merit and according to it, the CNA determines the number of years of accreditation that is given to an institution or career (between 2 and 7 years), having also the possibility of not accrediting them at all. Finished the period of accreditation, institutions and/or careers must repeat the process in order to maintain accreditation (Biblioteca Nacional del Congreso, 2011).

⁶ This precision is necessary due to the fact that it is not possible to point out that these graduates are not linked to education in another field, such as for example, dedicated to research, teaching in higher education institutions, teaching centers in non-school (university prep schools), or if they have followed graduate studies. In this way, it is not possible to assume that they have been completely turned away from education as an area of interest.

⁷ There was a cleaning of the data in order to eliminate to graduates of racing classified within the field of education, but which have little to do with the teaching in classrooms of elementary and secondary education. This aspect is dealt with in section "data and methodology".

⁸ That is to say, graduates of the younger cohort (2011 graduates) have at least 3 possible years to enter the classrooms (the same year 2011, 2012 and 2013), while the graduates of the older cohort (2007 graduates) have 7 possible years for the insertion to happen (the same year 2007, or between the years 2008 and 2013).

Table 3
Binomial logistic model: probability of being occupationally inserted

	Block 1	Block 2	Block 3	Block 4	Block 5
	Exp(B)	Exp(B)	Exp(B)	Exp(B)	Exp(B)
RM (re.: other regions)	0,659 ***	0,660 ***	0,709 ***	0,716 ***	0,795 ***
Female (ref.: Male)	1,800 ***	1,903 ***	1,924 ***	1,831 ***	1,810 ***
Married (ref.: Single)	1,096	2,238 ***	2,212 ***	2,188 ***	2,095 ***
Age (difference with the mean)	0,968 ***	0,966 ***	0,962 ***	0,968 ***	0,976 **
Female (ref.: Male) * Marital status (ref.: single)		0,392 ***	0,389 ***	0,393 ***	0,402 ***
Secondary education institutions with low GSE ⁹ (ref.: high)			1,485 ***	1,445 ***	1,498 ***
Secondary education institution with medium GSE (ref.: high)			1,286 ***	1,289 ***	1,298 ***
PSU NEM (Z score)				1,160 ***	1,084 ***
No CRUCH high accreditation (ref.: CRUCH high accreditation)					0,713 ***
IP high accreditation (ref.: CRUCH high accreditation)					0,707 **
CRUCH high accreditation)					1,097
No CRUCH low accreditation (ref.: CRUCH high accreditation)					0,752 ***
IP low accreditation (ref.: CRUCH high accreditation)					0,951
Evening Program (ref.: daytime)					0,843 **
Distance program / blended (ref.: daytime)					0,267 ***
Time of observation					1,283 ***
Constant	2,555 ***	2,453 ***	1,782 ***	1,925 ***	1,344 ***
Probability Log. -2	14.929,68	14.902,40	14.852,61	14.803,54	14.747,38
Cox and Snell R squared	0,021	0,023	0,026	0,030	0,046
Nagelkerke R squared	0,033	0,036	0,041	0,046	0,071

N total of the sample: 14.594 (27,3% of the cases).

Note: The reduction of the sample size is explained by the low proportion of cases that have information on the characteristics of the graduating secondary education institutions (indicator of social origin).

*** sig. < ,01 ** sig. < ,05 * sig. < ,1

Source: Own elaboration based on records of Mineduc, DEMRE and SIES.

⁹ Socioeconomic group (GSE for its initials in Spanish).

The first block presents the demographic characteristics of graduates. It is observed that females are 80% more likely to have been incorporated into teaching than males, while the older the person, the less probability. As for the geographical place, in the previous section it was highlighted the great proportion of education graduates that have attended ITT institutions with headquarters in RM. Therefore, in this model we compared those who studied in ITT institutions located in RM compared to those who studied in other regions. It can be observed that RM graduates are a third less likely to have been inserted to teaching than those who studied in other regions. These findings are relevant in as much as it was pointed out in the previous analysis, it is the region that concentrates the most graduates, and maybe this low possibility of insertion might be due to an oversupply of teaching labor.

Marital status at the time of graduation was included in the analysis as an indicator of graduates' life project. Although this indicator is not statistically significant in block 1, in block 2 the gender variable (female) is introduced making it statistically significant. This means that when you are woman and married at graduation time, you are 25% less likely to be occupationally inserted to teaching, controlling for the variables in the model. This evidence is relevant to the extent that teaching is a well-known feminized career, therefore, the project of family life could be playing an important role in explaining the employability of graduates.

The third block includes social background variables. It is observed that those that graduated from secondary education institutions of low socioeconomic status are 49% more likely to have been incorporated into the teaching than those who graduated from high socioeconomic status institutions. Meanwhile, graduates of institutions of middle socioeconomic status are 29% more likely to be inserted occupationally than graduates of high socioeconomic institutions. In this way, it is observed that people who come from more humble social origins are more likely to be incorporated into the teaching career, and in this sense, leaving outside the classroom those who come from a more accommodated family background.

The academic records (scores on college entrance tests) show an interesting trend: those who had a higher secondary school NEM were more likely to have been incorporated into teaching. Thus, having a NEM score that is one standard deviation above the average, increases insertion by a 16% more when controlling for demographic characteristics and socio-economic origin.

In regard to the characteristics of the initial teacher training, we have chosen as an indicator, the typology that combines membership to CRUCH with the years of accreditation of the institution. Under this categorization it is noted that graduates of institutions outside CRUCH, regardless of their accreditation, are about a third less likely to have been incorporated into the teaching than those who attended the ITT in high selectivity institutions CRUCH. The same is true with graduates from Professional Institutes of high selectivity. Finally, those who attended ITT in high selectivity institutions CRUCH, low selectivity CRUCH, and Professional Institutes are equally likely to have been inserted to teaching. This evidence as a whole raises the hypothesis that although they all have the same chance of having been inserted, they do so in very different contexts.

With regard to the characteristics of the training programs, it is observed that those who attended evening programs are 16% less likely to have been occupationally incorporated than those who attend daytime programs. And those who attended distance or mixed learning programs have 27% probabilities of insertion. This coupled with the evidence that only a small proportion attended short duration or irregular programs, gives an account of those who are effectively incorporating to teaching are those who attended full-time programs or careers.

Finally, the observation time was included as a fixed effect. It is noted that, as expected, the more recent the graduation is, the lower the probability of having been occupationally inserted. This may be indicating that the labor insertion after graduate takes time, because those who are observed for longer periods of time have a greater chance of being inserted than those who are observed by less periods of time.

Career path and teacher abandonment

This third section delves into career path, analyzing the effect of demographic characteristics, academic and initial training on the probability of being inserted either permanently or transitory, or the possibility of abandoning the teaching career.

In order to get a valid and reliable indicator of teaching trajectory and teaching abandonment, we selected a subsample of cases that have the feature of being observed at least 4 times in the records of teachers from Mineduc. We identified a total of 34,853 graduates that have the above-mentioned feature. 33% of the cases were not incorporated into the teaching career during all the observation period (2005-2013). On the other hand, 44% was permanently inserted to the teaching career, i.e. enters to the school system and never stops teaching. A third type corresponds to those who were inserted into the teaching career in a transitory manner, i.e. , it is possible to observe the event in one or more years in the records, then disappears for one or more years, but it returned before the end of the observation period. This feature is shared by 18% of the cases. Finally, 6% of the cases correspond to the possible abandonment of the teaching career, because by 3 years in a row it is not possible to observe them in the teacher records. If you look at the percentages of the total of inserts (Table 4), it is possible to point out that 36% of the graduates that are incorporated into teaching have an uncertain classroom permanence, either because it enters and leaves the school system momentarily, or because he/she does it for 3 consecutive periods without having returned by the year 2013.

Table 4
Case distribution according to labor trajectory

	N	Percentage of the total of the cases	Percentage of the total of those inserted
Not inserted	11.313	32,5%	--
Permanently inserted	15.194	43,6%	64,5%
Fluctuating insertion	6.163	17,7%	26,2%
Possible abandonment	2.183	6,3%	9,3%
Total	34.853	100%	
Excluded	18.606		

Source: Own elaboration base on the records of Mineduc, DEMRE and SIES.

To identify the characteristics that distinguish these 4 types of graduates a multinomial regression model was used and is described in Table 5.

Table 5
Multinomial Logistic Model: probability of not being inserted, permanent or temporary incorporation or possible abandonment

	Model 1 Ref.: no insertion	Model 2 Ref.: permanent insertion	Model 3 Ref.: transitory insertion	Model 4 Ref.: possible abandonment		
	Exp(B)	Exp(B)	Exp(B)	Exp(B)		
Permanent Inserts	RM (ref.: other regions)	0,810 ***		0,717 ***	0,788 *	
	Female (ref.: male)	1,619 ***		1,044	1,536 ***	
	Age (difference with the mean)	1,026 **		0,997	0,971	
	Secondary education institutions with low GSE (ref.: high)	1,350 ***		1,141	2,453 ***	
	Secondary education institutions with average GSE (ref.: high)	1,417 ***		1,179 *	2,058 ***	
	PSU NEM (Z score)	1,193 ***		1,159 ***	0,955	
	NO CRUCH high accreditation (ref.: CRUCH high accreditation)	0,536 ***		1,238 *	1,038	
	IP high accreditation (ref.: CRUCH high accreditation)	0,569 ***		1,266	1,200	
	CRUCH low accreditation (ref.: CRUCH high accreditation)	1,250 ***		1,159 *	1,300	
	NO CRUCH low accreditation (ref.: CRUCH high accreditation)	0,636 ***		1,335 ***	0,958	
	IP low accreditation (ref.: CRUCH high accreditation)	0,890		1,632 *	0,789	
	Observation time	3,395 ***		1,003	0,872 **	
	Transient Inserts	RM (ref.: other regions)	1,129	1,394 ***		1,099
		Female (Ref: male)	1,551 ***	0,958		1,472 ***
		Age (difference with the mean)	1,029 *	1,003		0,974
Secondary education institutions with low GSE (ref.: high)		1,183 *	0,876		2,150 ***	
Secondary education institutions with average GSE (ref.: high)		1,201 *	0,848 *		1,745 ***	
PSU NEM (Z score)		1,030	0,863 ***		0,824 ***	
NO CRUCH high accreditation (ref.: CRUCH high accreditation)		0,433 ***	0,807 *		0,838	
IP high accreditation (ref.: CRUCH high accreditation)		0,450 ***	0,790		0,948	
CRUCH low accreditation (ref.: CRUCH high accreditation)		1,078	0,863 *		1,121	
NO CRUCH low accreditation (ref.: CRUCH high accreditation)		0,477 ***	0,749 ***		0,718 *	
IP low accreditation (ref.: CRUCH high accreditation)		0,545 **	0,613 *		0,483 *	
Observation time		3,383 ***	0,997		0,869 **	

	RM (ref.: other regions)	1,027	1,269 *	0,910
	Female (ref.: male)	1,054	,651 ***	0,680 ***
	Age (difference with the mean)	1,056 **	1,030	1,026
Possible abandonment	Secondary education institutions with low GSE (ref: high)	0,550 ***	0,408 ***	0,465 ***
	Secondary education institutions with average GSE (ref.: high)	0,688 ***	0,486 ***	0,573 ***
	PSU NEM (Z score)	1,249 ***	1,047	1,213 ***
	NO CRUCH high accreditation (ref.: CRUCH high accreditation)	0,516 ***	0,964	1,193
	IP high accreditation (ref.: CRUCH high accreditation)	0,474	0,833	1,055
	CRUCH low accreditation (ref.: CRUCH high accreditation)	0,962	0,770	0,892
	NO CRUCH low accreditation (ref.: CRUCH high accreditation)	0,664 **	1,044	1,393 *
	IP low accreditation (ref.: CRUCH high accreditation)	1,128	1,268	2,069 *
	Observation time	3,895 ***	1,147 **	1,151 **
	<hr/>			
	N valid	10.461		
<hr/>				
	LR (null model)	20.318,300		
	LR (final model)	16.632,285		
<hr/>				
	Pseudo R squared	Cox y Snell	0,297	
		Nagelkerke	0,333	

Note: the sample corresponds to the cases that have at least 4 observations over time. The reduction of the sample size is also explained by the low proportion of cases that have information on the characteristics of secondary education graduation institutions (indicator of social origin).

*** sig. < 0,01 ** sig. < 0,05 * sig. < 0,1

Source: Own elaboration based on records of Mineduc, DEMRE and SIES.

In terms of the demographic variables, the model suggests that females in comparison with males—always have greater opportunities to be inserted and even to stay in teaching. As well, women are 54% more likely to be incorporated on a permanent basis than to leave teaching, without having any differences between entering permanently and temporarily. On the other hand, females are about 30% less likely to drop out of teaching than to be inserted permanently or temporarily.

With respect to age, apparently it only plays a role to distinguish between those who have been able to become inserted in teaching and those who have not been able to do so. Moreover: those that are one standard deviation above the average age at the time of certification are more likely of being inserted permanently or temporarily, or of leaving the teaching career than of no insertion at all.

In the previous section, it was observed that those who attended ITT institutions in RM were less likely to have been inserted to teaching compared with those who graduated from other regions. This section notes that, in addition, when they are checked, graduates of the RM remain less in the classroom than the graduates of regions. Proof of this is that graduates of RM are two fifths more likely to be inserted temporarily than permanently compared with graduates who attended ITT outside the RM.

Social origin presents interesting evidence: teachers of more humble origins leave less teaching than the teachers who come from a higher socioeconomic background. Therefore, those who attended secondary education in lower socioeconomic high schools have 1.5 more opportunities to become teachers on an ongoing basis than to abandon the teaching career, when compared with teachers of higher socioeconomic backgrounds. On the other hand, those who studied in middle class institutions are 106% more likely to be inserted permanently than to leaving the teaching career. It is interesting to note that there is no

difference between being inserted permanently or transitory between those who come from high or low socioeconomic backgrounds, while a difference exists when comparing the middle class group with those in the high socioeconomic group, being the middle class group more likely to be permanently inserted.

In terms of the academic background, it seems that those who have the best qualifications remain in teaching or drop out, being less viable the transitional insertion forms. It is observed that those who are one standard deviation above average are 16% more likely to become permanently inserted than temporarily inserted, but they also have a 21% increase in chances of abandoning than to be in and out of the classroom.

Finally, it is one of the main focuses of this study to examine whether there are differences in the modalities for inclusion of graduates from different types of institutions of higher education. We reiterate the evidence that those who attended non-traditional institutions and Professional Institutes (regardless of their level of accreditation) have less chances to be inserted (either permanently or temporarily or resulting in abandonment) than those who studied in CRUCH high accreditation institutions.

However, when inserted, those who remain in the classroom are not graduates of traditional institutions of high accreditation. On the contrary, the graduates from institutions outside CRUCH (regardless of their accreditation) and of CRUCH institutions and Professional Institutes of low accreditation are more likely to be permanent than temporarily when compared with graduates of CRUCH institutions of high accreditation.

With respect to abandonment, there are no differences between abandonment and remaining in the classroom, but it is observed that for those who studied at institutions outside CRUCH and at low accreditation institutes are more likely to leave teaching than staying inserted temporarily in teaching.

This evidence may be somewhat confusing, but it seems that while for a graduate of a traditional university with high accreditation is more likely the insertion, it is also less likely he/she will remain in the classroom. On the contrary, for a graduate of an institution of low accreditation is more likely not entering the teaching profession, but when they enter, they remain in the classroom, or leave, but the transitional forms are unlikely.

Discussion and conclusions

The study during the first years of the teaching career has generated a growing interest since it has provided important evidence about the distribution of teachers in the system and the possibilities of abandoning teaching. It is in this line that this study provides new evidence on the characteristics that distinguish those who are joining the teaching in elementary and secondary schools from those who, having received training for this purpose —are not doing it so. Similarly, the study provides a description of the early years of the career trajectory of teachers, while distinguishing between those who enter education on a permanent basis, from those who do so temporarily.

With respect to *who* is graduating from education careers, it is observed that they are mostly females, whose average age is around 26 years old and that they come from a medium-low socio-economic origin.

Moreover, the majority of graduates obtained scores on college entrance tests between 450 and 600 points, aspect that public policy has tried to revert with the Teaching Vocation Scholarship. This scholarship was implemented in 2010 in order to encourage, through the financing of their studies, that applicants to higher education with high PSU scores would be interested in education careers. However, the scope of this scholarship is limited as much as 60% of enrollment focuses on careers that do not comply with the minimum requirements¹⁰ so that their candidates can access this benefit (Alvarado, Duarte, & Neilson, 2012, p. 31).

In addition, as mentioned at the beginning, there are more than 700 programs of initial teacher training, many of them have few years of accreditation and do not have their applicants' selection protocols, or they are very lax. This research provides evidence in this line, stressing that while the majority of graduates was formed in universities, one in three graduates comes from institutions that have between 0 and 2 years of accreditation and only 3% studied at institutions receiving the maximum of possible accreditation (7 years).

Despite this, it is necessary to insist that only a low proportion of graduates come from programs of short duration or from not face to face programs. This could mean that we are facing the retreat of the infamous *marmicoc teachers*.¹¹

Now, in terms of employment, it shows that 79% of graduates in education careers have been inserted in elementary or secondary education. With respect to *who are inserted*, the inclusion is more likely for females, for the youngest and graduates of regions. The difficulties in the insertion of graduates in RM could be due to an over-supply of graduates, what could be the result in turn of the concentration of teacher education centers in RM.

In a discipline as strongly feminized as teaching, the family project could be playing an important role in explaining the lack of labor insertion of a type of graduates: females. Although the indicator used only indicates the relationship with the civil status at the time of graduating, it gives us an important piece of evidence with regard to the role that this type of aspects play when it comes the time to analyze the intention to follow the teaching career.

Additional interesting evidence arises from the role the academic background has, because it is observed that those who obtained higher scores on university selection tests have greater chances to become occupationally inserted. Although the magnitude of the difference is not so big, its effect is maintained when controlling by ITT characteristics, which may be suggesting that there is a self-selection by graduates at the time of the insertion.

Based on the ITT characteristics, it is observed that graduates who attended ITT at CRUCH institutions of high selectivity, CRUCH low selectivity or Professional Institutes of low selectivity are likely to have been incorporated into teaching. This raises the hypothesis that while both are inserted in the same

¹⁰ Among the career requirements include a two year minimum accreditation and a score of 500 points above the admission cut out point (Alvarado, Duarte, & Neilson, 2012, p. 9).

¹¹ Due to the mass education in the sixties, the government implemented a policy of teacher accelerated training, who were known as *marmicoc teachers* (by the well-known brand of pressure cookers sold in Chile) (Núñez, 2010, pp. 38-39).

proportion, they do so in different contexts and under different working conditions. This is at the core of the investigation with respect to the non-randomized order of teachers in the educational system.

And, finally, with regard to the employment history, understood as the permanence in the teaching and the possible abandonment, it is noted that the majority of graduates are inserted to teaching without leaving it throughout the observation period; however, almost a third of the cases that are incorporated into teaching have a fluctuating path, entering and exiting the classroom *year after year*. It is therefore relevant to examine the characteristics that differentiate those who are permanently inserted of those who have uneven trajectories (i.e., a transient insertion in the classroom). Among these features the role of gender, social origin and ITT characteristics are important: teaching is a career that attracts and retains mainly females and those who come from a more humble social origin. With regard to the FID, although the evidence may seem a little confusing, it seems that between graduates of non-traditional institutions and of low accreditations—which are the majority—it is more likely the no insertion, but when they enter into the classroom, they remain in teaching or leave it.

This evidence as a whole suggests that there are differences in the profile of those who are inserted and those who are not, and differences between people who are permanently inserted to teaching and those who do it temporarily. However, it seems that these differences are not directed toward setting aside the *best teaching candidates*, and in this sense, it would be a missed opportunity for the ITT in terms of the efforts being made to attract and retain the best candidates. However, it was noted that a teacher with better academic credentials, the possibility to stay or leave is greater than to stay temporarily inserted. This may suggest that if a “good candidate” finds good working conditions he/she will stay, but if he/she does not find them, they could abandon teaching forever. This is a hypothesis that should be examined in greater depth.

In short, the evidence presented here raises a series of questions about the type of institutions into which faculty gets inserted and where the teachers remain, given the profile and the differences described. In the same way, it leads us to deep into the working conditions that lead some to remain in education and others to hesitate between insertion and abandonment.

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References

- Alvarado, M., Duarte, F., & Neilson, C. (2012). *Efectos Beca Vocación de Profesor*. Retrieved from http://www.mineduc.cl/usuarios/mineduc/doc/201201111603490_EstudioEfectospreliminaresBecaVocaciOndeProfesor.pdf
- Avalos, B., & Bascopé, M. (2014). Future teacher trajectory research: its contribution to teacher education and policy. *Education as Change*, 18(1), 19-32. doi: 10.1080/16823206.2013.877353
- Barber, M., & Mourshed, M. (2008). *Cómo hicieron los sistemas educativos con mejor desempeño del mundo para alcanzar sus objetivos*. Retrieved from PREAL http://www.oei.es/pdfs/documento_preal41.pdf
- Biblioteca del Congreso Nacional (2011). *Guía legal sobre acreditación de la educación superior*. Retrieved from <http://www.bcn.cl/leyfacil/recurso/acreditacion-de-la-educacion-superior>
- Boyd, D., Lankford, H., Loeb, S., & Wyckoff, J. (2005). Explaining the short careers of highachieving teachers in schools with low-performing students. *American Economic Review Proceedings*, 95(2), 166-171. doi: 10.1257/000282805774669628
- Brunner, J. J. (2009). *Educación superior en Chile. Instituciones, mercados y políticas gubernamentales (1967-2007)*. Santiago, Chile: Ediciones Universidad Diego Portales.
- Cabezas, V., Gallego, F., Santelices, V., & Zarhi, M. (2011). *Factores correlacionados con las trayectorias laborales de docentes en Chile, con especial énfasis en sus atributos académicos*. Santiago: Ministerio de Educación.
- Chong, S., & Low, E. (2009). Why I want to teach and how I feel about teaching: formation of teacher. *Education Research Policy Practice*, 8, 59-72. doi: 10.1007/s10671-008-9056-z
- Cox, C., Meckes, L., & Bascopé, M. (2010). La institucionalidad formadora de profesores en Chile en la década del 2000: velocidad del mercado y parsimonia de las políticas. *Revista Pensamiento Educativo*, 46-47, 205-245.
- Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: a descriptive analysis. *Educational Evaluation and Policy Analysis*, 24(1), 37-62. doi: 10.3102/01623737024001037
- Lortie, D. (1975). *Schoolteacher. A sociological study*. Chicago: University of Chicago Press.
- Mineduc (2012). *Ingreso al mercado laboral y resultados en la evaluación docente de los titulados de pedagogía 2007-2010*. Santiago: Centro de Estudios Mineduc.
- Núñez, I. (2010). *Las Escuelas Normales: una historia de fortalezas y debilidades. 1842-1973*. 40. Santiago, Chile: Docencia, Colegio de Profesores de Chile.
- OCDE (2009). *Los docentes son importantes: atraer, formar y conservar a los docentes eficientes*. Retrieved from <http://www.waace.org/enciclopedia/2/Los%20docentes%20son%20importantes.pdf>
- Ortúzar, M. S., Flores, C., Milesi, C., & Cox, C. (2009). *Aspectos de la formación inicial de docentes y su influencia en el rendimiento académico de los alumnos*. Santiago, Chile: Centro de Políticas Públicas, UC.
- PNUD (2006). *Expansión de la educación superior en Chile. Hacia un nuevo enfoque de la equidad y calidad*. Santiago, Chile: Author.
- Rivero, R. (2012). *The distribution of highly-qualified teachers in Chile*. Paper presented at the Segundo Congreso Interdisciplinario de Investigación en Educación (CIIE 2012), Santiago, Chile.
- Valenzuela, J., & Sevilla, A. (2013). *La movilidad de los nuevos profesores chilenos en la década del 2000: un sistema escolar viviendo en peligro*. (Unpublished study). Fondecyt N° 1120740, Santiago, Chile.