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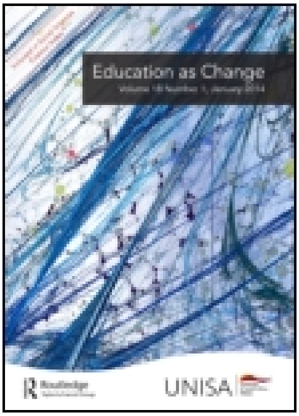

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Future teacher trajectory research: Its contribution to teacher education and policy

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Future teacher trajectory research: Its contribution to teacher education and policy

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Abstract

Through means of an ongoing trajectory study of teachers in Chile moving from teacher education into schools, this article examines how teacher education research may contribute to feeding into institutional improvement as well as the macro level of teacher education policy. It first provides some contextual information on the development of Chilean teacher education in the aftermath of the military dictatorship period (1973–1990) and of a research base within its institutions. Then it centres on how future teachers from 11 teacher education programmes report on their learning and growth processes before and after their final practicum, and refer to the contextual effects of school placement on these processes. To this end, questionnaires before and after the practicum experience were administered to an initial group of 152 future teachers and semi-structured interviews were conducted with 16 of these teachers as well as one observation in their classrooms and schools. The key elements examined were motivation, pedagogical satisfaction and self-efficacy, as well as conditions of practicum and teacher assessment of its effect on learning and commitment to teaching.

Keywords: teacher trajectories, motivation, self-efficacy, pedagogic satisfaction, teacher education effects, school contexts

Introduction

Whether and how research influences change has been a longstanding and never quite resolved issue. In fact, one finds texts centred on issues of educational change that do not make explicit use of research references to substantiate their discussions (see, for example, Altrichter & Elliott 2000; Lang *et al*. 1999). On the other hand, theoretically speaking, it is difficult to dispute that research evidence is needed not only to monitor and evaluate institutional and programme improvement, but also to further or stimulate change. Such, for example, was the assumption behind the undertaking of a major review of teacher education-related research in the United States, supported by the American Education Research Association (Cochran-Smith & Zeichner 2005). Such also is the assumption behind teacher education reform initiatives that not only highlight the role of research evidence but also urge that it be built into the heart of its programmes (Kirby *et al*. 2006).

Turning specifically to uses of research evidence that feed into teacher education improvement, and with the case of Chile in mind, it is possible to speak of two levels at which research may have this kind of influence: a macro policy/government level and a micro-institutional level represented by individual teacher education programmes. The macro level operates through government agencies that have a say in regulating teacher education or, more broadly, are responsible for the quality of the education system. This level is open to diverse influences that mark their orientations and decisions. Some of these

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come from within the education, social or economic sectors, some from civil society concerns and some from external international agencies, all of which handle data to indicate how well teacher education may or may not be working and whether or not it serves the needs of the school system. Conversely, at the micro teacher institution level, we speak of research that covers the content and operation of its programme and preparation processes. The providers of information are researchers from the institution or from other centres who, focusing on micro-level issues, examine how the curriculum is functioning and how relevant it is to the school subjects' teaching requirements, highlight issues surrounding practical learning, how future teachers are cognitively and affectively engaged in teaching and whether or not the opportunities provided should be improved or changed. There is considerable research of this kind in many parts of the world, and to a lesser extent in Chile and other Latin American contexts. However, there is much less evidence that this kind of institution-led research feeds into policy and more evidence of a different but highly influential type of research, reductionist in nature, that catches the ear of policy-makers (Barber & Mourshed 2007; Mourshed, Chijioke & Barber 2010).

Through means of an ongoing trajectory study of teachers in Chile moving from teacher education into schools, we suggest in this article how research aimed at feeding into the quality of teacher education programmes (micro-level) may also contribute to policy decision-making (macro-level), by calling into question narrow ways of interpreting the evidence. We will first provide some contextual information on the development of Chilean teacher education in the aftermath of the military dictatorship period (1973–1990) and of a research base within its institutions. Then, on the basis of a trajectory study, we will centre on how future teachers report on their learning and growth processes before and after their final practicum, and refer to the contextual effects of school placement on these processes. We conclude by suggesting that this kind of study, taken together with hard evidence of early drop-out from teaching, should warn policy-makers against what Kennedy (2010) calls an 'attribution error', that is, of erroneously attributing to teacher education failures in performance and retention of teachers, which in fact may be the product of an interrelation between complex contexts and teacher education quality.

Teacher education in Chile

The effects of the long period of military dictatorship on teacher education were considerable, in terms of its institutional arrangements as well as its intake of future teachers, curriculum and preparation processes.

At the beginning of the 1970s most teacher education in Chile was offered at universities. After the military coup that took place in 1973, all public universities were placed under military rule. This military intervention produced an exodus of well-qualified academics from all faculties in the name of 'ideological and political cleansing' (Núñez 2002), which curtailed independent forms of social and educational research located within universities. A further blow to education as an academic discipline was the decision, later in the 1980s, to position teacher education outside of universities. The faculties of education of all state institutions were closed and replaced by non-university 'teacher education academies'. As well as supporting the notion of teaching as implementation of technical know-how (Núñez 2002), these developments de facto detained any progress in education research. The situation was not much altered when in 1987 the military government, reversing its earlier position, converted two of the biggest teacher education academies it had established earlier into pedagogic universities, nor was it changed significantly by the General Law of Education, passed at the end of the military government (1990) which re-established teacher education as university-based.

By the mid-1990s, it was clear that teacher education needed radical renewal if it was to produce teachers who could cope with the requirements arising from the educational reforms taking place since Chile's return to democracy. Enrolment in teacher education programmes was on a steady path of decline, curricular contents needed revision, the practicum experiences offered to future teachers were

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limited, most teacher educators had barely completed an undergraduate degree and there was little research being produced by teacher educators. A start to the needed change was brought about by the government's decision in 1997 to inject a substantial amount of funding into 17 teacher education university institutions on the basis of renewal projects, benefitting just over 80% of the future teachers enrolled. This funding contributed to a solid period of changes between 1998 and 2002, known as the Programme for Strengthening of Teacher Education, or FFID (its Spanish acronym). While each institution produced its own reform proposals covering the main components of teacher education, acting as a team the managers of the programme at the Ministry of Education and the project coordinators engaged in learning from current research and experiences as well as learning from each other. In the four years of implementation, the university teacher education programmes experienced innovations informed by research and practice, some of which were quite radical in form (Iglesias 2002).

In the course of the four years of support for the projects, two external evaluations took place leading to various actions of revision and improvement. In addition, the number of teacher educators with doctoral degrees in the participating institutions increased between 1997 and 2001 from 13% to 20%, as did the research output by teacher educators. Thus, the FFID projects had been able to lay a base for research to inform teacher education processes.

Currently, most of the universities with teacher education schools or faculties have internal research funds allocated on a competitive basis. There are also two government funds that benefit education researchers. The first, open to all fields of research, has in recent years doubled the number of approved education projects. The second, which directly supports education research, provides more room for teacher education-related projects. However, only 15% of such projects over the period 2006–2012 have targeted teacher education issues (Centro de Estudios, Ministerio de Educación 2013). Thus, there still is room for research to feed into teacher education improvement.

The study and its conceptual basis

This study brings together a team of six researchers from four different universities who were funded by the National Fund for Science and Technology Development (FONDECYT) to examine the trajectories of future teachers during their final year of studies (fourth or fifth year, depending on the programme) and then as they move into schools (years 2013 and 2014). The project also includes an econometric study to assess the extent to which, over a ten-year period, teachers with 0–3 years of service moved schools or left the profession.

In designing the study, the purpose was to move beyond the traditional literature on problems of beginning teachers, already considered in earlier research in Chile, towards concepts explored in recent studies on teacher trajectories. To this end, the trajectory is examined through the lenses of teacher personal and professional identity construction and capability development (Chong & Low 2009; Malmberg 2008; So & Watkins 2005). It is considered both as an externally observable movement through time and as embedded in teacher narratives, as they look to the past in anticipating the future (Giddens 1991, cited in Smith 2007) and imagine their 'possible-selves' as teachers (Hamman *et al*. 2010; Leijen & Kullasepp 2013; Markus & Nurius 1986).

Part of the construction of professional identity is linked to the reasons or motivation for choosing to teach and continuing as a teacher. Motivation factors range from personal subjective reasons for wishing to become a teacher to external ones having to do with salaries, available time or the prestige associated with teaching. Reasons for becoming a teacher are routinely examined in studies of future teachers, either with a direct focus on the content area they propose to teach (Tatto *et al*. 2012) or more broadly on the interplay between personal values of future teachers, their reasons for wanting to teach and their views of the profession's status and working conditions (Watt & Richardson 2006; Watt *et al*. 2012).

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Also, from the perspective of teacher trajectories, motivation is examined in its interaction with closely related factors such as commitment to becoming a teacher together with teacher education influences and school contexts. The way in which this interaction operates may lead to decisions to remain in or leave the profession (Kumazawa 2013; Rots *et al*. 2010).

Beliefs about the profession and its status, about teaching and knowledge and particularly teacher perceptions of self-efficacy make up a large programme of research, also considered in many of the recent trajectory studies. Perceptions or beliefs about self-efficacy have to do with how capable a teacher perceives him or herself to be in teaching, managing classrooms and successfully engaging students in learning activities and results (Woolfolk Hoy & Burke Spero 2005). Presumably these perceptions should increase as teachers learn to teach and gain experience, although the exact way in which this process operates is linked to the particular contexts of teacher education programmes and of the schools and school systems in which teachers begin their work. Self-efficacy studies have examined the factors that increase or decrease a teacher's sense of efficacy, with more recent ones focusing on changes during teacher preparation and beginning to teach (Sahin & Atay 2010; Woolfolk Hoy & Burke Spero 2005).

Handling teaching situations involves not only enacting content knowledge for the benefit of student learning, but also exhibiting a degree of cognitive complexity (Bullough *et al*. 2008) in the interpretation and management of teaching situations. This cognitive complexity is put to the test in those situations that are deemed to be unclear or uncertain. New teachers handle such situations differently depending on how static or malleable their views on them are, but can be assisted in the process through appropriate mentoring discussions that stretch the limits of their cognitive complexity (Bullough *et al*. 2008). The role of teacher education and mentoring support in widening teacher capabilities appears in So and Watkins' (2005) follow-up study from teacher education into the first year of school teaching. The authors examined teachers' conceptions of teaching, their thinking when engaged in lesson planning, the pedagogic emphasis in their lessons and their reflections about their teaching experiences. They observed that conceptions of teaching and learning appear in combinations, and that they change over time. Not all changes occur in the desired directions. Thus, the teachers studied by So and Watkins (2005) became more constructivist once they were teaching in schools, but less analytic in planning and more centred on descriptions and information in their first year of teaching than they had been during their practicum experiences. Proper mentoring can help to deal with this.

School contexts and school system factors affect new teachers' well-being and satisfaction, and are associated with reasons for leaving the profession (Grossman & Thompson 2004; Skaalvick & Skaalvick 2011). This may also happen earlier, during the practicum phase of teacher education. Beliefs about teaching and learning developed during their preparation may contrast with observed or forced-upon practices in field placement, leading to disillusionment and decisions to leave teaching (Rots *et al*. 2010). Finding out what kind of factors protect against emotional burnout, considered to be key in the decision to leave (Hong 2010), was part of Johnson *et al*.'s (forthcoming) study of beginning teachers in Australia. By interviewing them twice on their highs and lows in their first year of teaching, they were able to trace 'resilience' or decisions to stay in teaching to formative experiences during teacher training, ease in finding employment and being able to fit into the school. Also recognisable were well-known factors such as school micro-politics, collaboration with other teachers and the stage of identity construction. Emotional factors and commitment were equally found to affect retention in Jones and Youngs' (2012) study of teachers with one to three years of experience.

The teacher preparation context

Before proceeding further with the description of the study, we provide a brief explanation of how teacher education operates in Chile. For the most part, teacher education is offered in public and private

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universities and covers generalist preparation for the current eight-year primary or basic school and specialised preparation for the four-year secondary school. Universities also prepare pre-school and special education teachers. Most programmes offer concurrent general, subject-specific and professional preparation during a four- to five-year period. A few university secondary programmes are consecutive in that they provide a year to 18 months of professional preparation for graduates. Most concurrent programmes include practical field experiences starting in the first or second year of study, a longer period of initial teaching practice in the penultimate year of study and an extended practice in the second half of the final year, which includes full responsibility for teaching either in primary or secondary classes for approximately four months. In their final practicum future teachers are supervised by university tutors, but more importantly by school-based teachers. Other than these general traits, there are no externally prescribed forms of guiding the final practicum experiences. However, in general, many programmes use portfolios to assess the future teachers during and at the end of the practicum, but vary in the amount of supervision and the quality of feedback provided to future teachers.

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Purpose, subjects studied and methods

The broad purposes of our study centred first on how future teachers at the end of their preparation view their profession, the demands of teaching, how satisfied they are with their preparation, what their cognitive beliefs and self-efficacy perceptions are, how they see themselves as teachers in the future and what the observable differences are prior to and after completion of their final practicum period. Secondly, we aimed to trace their perceptions of self-efficacy or teaching capabilities together with changes in their professional identity definitions occurring with their new status as beginning teachers in particular school contexts, searching for employment or deciding not to enter teaching. Finally, we hope to offer evidence about the complexities of entering into the profession and the interaction between what teachers learn during their preparation and the real demands of teaching, in order to provide feedback to the teacher education institutions involved and to government authorities and politicians charged with teacher development and law-making.

The subjects studied

Initially, we drew the study's population from 11 teacher education primary and secondary programmes that were part of four university faculties of education in the capital city of Santiago, and from another three in the cities of Arica, Valparaíso and Chillán. All these future teachers were in their final year of study in three primary preparation programmes and eight secondary ones, specialising in Mathematics and Physics, History, Spanish Language and English Language. Only those that signed informed consent documents became part of the study (N = 152). Of these, the majority were female (71%), aged between 22 and 26 years (88%), and most had attended public municipal and private subsidised secondary schools (64%). Only 7.5% had attended a fully private school. Most were the first in their families to attend university (84%).

The methods

The study was designed as a mixed-methods inquiry utilising questionnaires, semi-structured interviews, context observations (classroom and school) and narratives. Questionnaires were administered prior to the beginning of the final four-month fieldwork experience in schools and after its completion. The first questionnaire covered personal and educational background, socio-economic status (parents' education, books at home), social activities carried out before or during teacher education (youth groups, choir, community activities), motivation for teaching (Richardson & Watt 2007; Watt & Richardson 2006), views regarding the nature of teaching and the teaching profession, degree of satisfaction with their teacher education experiences, beliefs about the nature of knowledge or epistemic beliefs (Schraw, Bendixen & Dunkle 2002) and self-efficacy beliefs (Tschannen-Moran & Woolfolk Hoy 2001). The second questionnaire, administered at the end of the practicum, focused on possible changes in satisfaction with their teacher preparation, in perceptions of self-efficacy and in what they considered to be key requirements for teaching as well as conditions of the teaching profession. New questions inquired about the practicum experience – teaching load and frequency and quality of supervision (by school mentor and university supervisor) – as well as about plans to look for a job and expectations about the length of time they would remain in the profession.

The semi-structured interviews conducted after completion of the practicum experience consisted of six open-ended questions about their practicum experience (number of classes and school level, number of students, degree of responsibility, preparation process and supervision). They were asked to select high and low moments in the last two weeks of teaching, and provide reasons for selecting them. They were also asked to rate their performance during the practicum period as better, the same or worse than expected, providing a metaphor that encapsulated their thinking about teaching and teachers. Finally, they were asked about their plans for the future, how they saw themselves as teachers, in what ways they would like to stand out and what they would not like to happen in their work as teachers.

In terms of numbers, we collected 152 responses to the first questionnaire. Of these respondents, 54 then responded the second questionnaire. This number was lower because there was no opportunity to meet them as a group, and we had to conduct the survey via e-mail. However, as there were no differences in the relevant characteristics of both samples, we were able to compare responses to items that were common in both the pre- and post-practicum questionnaires. Towards the end of the practicum, we interviewed 16 future teachers from among those who responded to the initial questionnaire and who provided informed consent. We also carried out an observation of 12 of these teachers in their classrooms and schools.

Analysis of the quantitative data included descriptive statistics and construction of indices using exploratory factor analysis for three of the variables that employed scale measurement: motivation, self-efficacy and epistemic beliefs. The qualitative data analysis included an initial descriptive coding yielding around 26 substantive categories of answers related to the questions asked, which are used in this paper to link qualitative answers to questionnaire responses. Further in-depth coding is being carried out to pursue themes related to identity, future projections and self-efficacy.

The second phase of the project, ongoing at present, includes joint work with a group of those teachers who began to teach in schools and who gave informed consent. It consists of receiving from them periodical short narratives of positive and complicated experiences in their teaching, and their reasons for selecting these experiences. It is expected that at the end of their first year of teaching they will meet with the researchers to write a narrative of the overall experience with discussion and input from the entire group. In addition to this, the researchers are attempting to follow those who had not found a job but were trying to do so, and those who while not becoming teachers have taken on an education-related activity.

In the rest of this paper, we will concentrate on findings from the first stage of the project with an emphasis on motivation and future projections, satisfaction with their teacher preparation and their own capabilities, beliefs about knowledge and perceptions of self-efficacy as teachers.

Results and discussion

Motivation to become a teacher

As the future teachers studied would soon be faced with formal entry into the profession, it seemed appropriate to inquire about their motives for becoming a teacher. Using a well-proven scale (Richardson & Watt 2007; Watt & Richardson 2006), the group was asked in the pre-practicum

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questionnaire to react to a list of 16 possible reasons for becoming a teacher. Exploratory factor analysis allowed us to detect three main types of reasons: the contribution that teaching makes to society; the intrinsic value of teaching; and its working conditions. As shown in Table 1, the least preferred reasons were those related to possible benefits in working conditions, while those most valued referred to social contribution and appreciation for the work teachers do. The ratings given to these reasons concur in general with ratings given by prospective teachers in Watt *et al*.'s (2012) study, which was carried out in seven countries using the same instrument.

These questionnaire responses were further supported in spontaneous narratives occurring during the interviews:

> I think that what pushed me most to become a teacher was to feel I could be part of the life of persons (Marisel, future mathematics teacher).

> I really wanted to study Drama but my parents would not let me do so, so I chose the second best. … But in my third year I encountered a decisive influence provided by my Methods teacher… (Samuel, future history teacher).

Further pursuing their degree of commitment to teaching, the second questionnaire after completion of the practicum period included a question about their future intentions: would they effectively look for a job and how long did they think they would remain in teaching? Almost all future teachers (96%) declared that they intended to become practising teachers, and over 86% said they would work for at least six years, although some stated they would remain in teaching for 10, 20 and even up to 30 years. However, a smaller group said they would only work for five or fewer years, partly because of low teacher salaries or because they intended to pursue graduate studies. These were some of the reasons given:

> One can always work in something other than teaching, earning much more money, thus being able to save and do a master's degree or something different (Paloma, primary future teacher).

> All I want is to find a job, but not anywhere: I don't feel prepared to work anywhere [meaning a socio-economically vulnerable school], I don't think I have the capacity for this (Philip, future history teacher).

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Table 1: Degree of agreement about reasons for choosing teaching as a career (1 = Not at all in agreement; 7 = Very much in agreement; N = 154)

Factors	I chose teaching as a career because	Mn	SD
Social contribution	'I could influence new generations'	5.97	1.40
	'I could offer a contribution to society'	6.13	1.24
	'I could reduce inequality in my country'	5.62	1.60
Intrinsic value of teaching	'I always wanted to be a teacher'	4.97	1.92
	'It's the career I always wanted to pursue'	5.72	1.71
	'I like to work with children and young people'	6.09	1.31
Teachers' working conditions	'I would be sure to get a job when I graduated'	3.92	1.93
	'Convenient working hours and summer holidays'	4.03	1.91

Source: Pre-practicum questionnaire.

Views of themselves in the future were also elicited during the post-practicum interviews. These were in line with a general commitment to teaching, but quite different in the emphasis they felt they would give to the task. For some, their future went beyond just classroom teaching: as a history teacher, 'to involve the local community, to write the history of the local community'; 'teaching, but also being able to do research'. For others, it was simply a matter of urgency: 'all I want is to find a job, not waste time'. There was the broader and more long-reaching perspective of what they would hope to become as teachers: 'I would like to stand out as good teacher, with students saying: Oh yes, we understood it'; "If and when I get a teaching job, I would right away like to centre on good management … teachers who have been in the system for too long have neglected this'. But they also spoke of feared 'possible-selves' (Hamman *et al*. 2010) or what they would not want to become: 'I would never want to lose the human side of things – I would never want to be looking at a mass of students. If I get to the point at which I stop being surprised by them or seeing them as they are, I will leave the profession'.

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School contexts and teaching capabilities

In a broad sense, we speak of capabilities as resulting from teacher education experiences. These we express as 'pedagogical satisfaction' with themselves as teachers and 'self-efficacy' perceptions related more directly to work in classrooms and schools. These capabilities could have been affected by how they experienced the conditions and opportunity to learn during their final practicum experience.

There are three types of schools in Chile in terms of management and funding: public municipal, private subsidised with public funding and entirely private schools. Most future teachers were assigned to private subsidised (62%), followed by public municipal schools (23%) and only a few to entirely private schools (15%). Most of the schools were mixed gender. Being assigned to an all-girls private school compared to a mixed municipal or poor private subsidised school in Santiago certainly meant a very different type of learning experience, as we hear from two future history teachers in quite different settings – the metropolitan city of Santiago and the provincial city of Chillán in the south of the country:

> It is the sceneries that hit you as a teacher; I could have done my practicum in a school with lesser social and economic vulnerability and it might have been different. But I would not have acquired the strength that I have now in a school with many social, many educational problems … and I have learned a lot, I have learned a lot that I probably would not have learned elsewhere (George, future history teacher, municipal school, Chillán).

> [The school] was like a cup of milk … If they were to ask me to continue teaching there I would be delighted to do so. It is a reality not usually found. The teacher figure is respected by the students (Philip, future history teacher, all-girls private school, Santiago).

The opportunity to learn through their practicum experience varied not only because of the type of school to which they were assigned, but fundamentally because of the conditions of their practicum: duration, actual teaching opportunities and degree of feedback from university supervisors and school mentors. Almost half of the 54 teachers who answered the second questionnaire had been in schools for 16–20 weeks, while the rest only for 11–15 weeks, which is removed from the declared time of 20 weeks or four months for most programmes. Time actually spent teaching was also variable, and depended very much on the opportunity provided by the school mentor. In interviews we learned about this variability, which reached a low in the case of one future primary teacher who only had full teaching responsibility for one month. The rest of the time was spent observing or assisting the classroom teacher with routine tasks such as photocopying classroom materials. Regarding the adequacy of the conditions provided by the school setting for the practicum, 65% of the 54 future teachers who responded to the questionnaire rated these as 'good' and another 16% as 'excellent'. But over half of the sample (53%) noted the lack of opportunities for interacting with other teachers in the school. On frequency of visits or presence of mentor/supervisor in the classroom, most respondents (80%) reported that their mentor was present in their classrooms for around 75% of their entire teaching time, and just over half of the group (57%) reported that their university supervisor was present for less than 25% of their total teaching time.

With respect to adequacy of mentoring provided by their school-teacher mentor and the university supervisor, around a third rated both the school-teacher's mentoring and the university supervision as being 'insufficient' or 'deficient'. In fact, we heard from those interviewed that the university supervisor had visited them, at best, twice during their practicum period, while school mentors, although generally present in the classroom, did not always offer appropriate feedback on their work or suggest other ways of doing it:

> The teacher just gave me a direct order: I was to work according to the teacher's guide and textbook. I didn't like it at all (Paloma, primary teacher).

> Not really, I told her initially what I was planning to do, but we never sat down to talk about it, with me telling her what I wanted to do, and she changing something … I don't know whether she actually ever read my lesson plans (Erick, primary teacher).

Changes in 'pedagogical satisfaction'

Most teachers hold an overall concept of pedagogy that involves a personal view about what education is and its importance, a degree of integration between their identity as people and as teachers, and a view of what is key in terms of their role with students, such as understanding and dealing with their differences, helping those with learning difficulties and stimulating all to achieve their best. Based on the questionnaire applied at Boston Lynch School of Education (2010) on a yearly basis to assess expectations of future teachers upon entry to the preparation programme, we used some prompts to assess our teachers' degree of 'pedagogical satisfaction'.

As shown in Table 2, half of the group were less satisfied after practicum about having developed a personal philosophy of education. There also seemed to be less or the same degree of satisfaction with

Table 2: Changes in degree of 'pedagogical satisfaction' after the practicum experience (% of 54 teachers)

	Lesser	The same	Greater
Develop a personal philosophy of education	50%	21%	29%
Help others who are having difficulty learning	39%	18%	43%
Promote understanding across diverse groups	35%	33%	33%
Become knowledgeable about social issues that affect teaching and schooling	31%	33%	37%
Improve student achievement	25%	29%	46%
Integrate my personal identity into my work as a teacher	38%	29%	33%
Help children and young people to achieve their highest potential	40%	25%	35%
Mean	37%	27%	36%

Source: Pre- and post-practicum questionnaires.

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being able to help students achieve their highest potential and to integrate their personal identity with their work as teachers. This may be related to dealing with the complexities of the specific demands of teaching. However, reflections during the interviews provide examples of what future teachers meant by moving from lesser to greater satisfaction about these capacities at the end of their practicum:

> I think that I will be a good teacher. I don't think that teaching is something like one goes to the school and has all the knowledge needed. One becomes in time. The contents are the same, mostly memory-based and one learns them and teaches them to the children, but the difference is that one uses different strategies (Jessenia, primary teacher).

> I have performed much better than what I thought … Initially, I did not feel well prepared for the practicum, prepared to face 40 pupils and over and above to teach five classes. Too much! (Iza, secondary mathematics teacher).

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Changes in 'self-efficacy' perceptions

We inquired about self-efficacy perceptions using the short version of the Tschannen-Moran and Woolfolk Hoy 'Teachers' Sense of Efficacy Scale' (2001). This instrument consists of 12 items that after factor analysis are generally distributed across three categories of efficacy perceptions: student engagement, instructional strategies and classroom management. We asked future teachers to rate

Table 3: Changes in self-efficacy perception pre and post-practicum (1 = Not at all; 3 = Very little; 5 = Some degree; 7 = Quite a bit; 9 = A great deal)

Means per factor		Means per item		
Classroom Management		**Before**	**After**	**Diff**
Mn. Pre = 6.32 Mn. Post= 7 Diff. = 0.68*	Control disruptive behaviour in the classroom	6.64	6.75	0.11
	Get students to follow classroom rules	6.38	7.15	0.76*
	Calm a student who is disruptive or noisy	6.16	7.09	0.93*
	Establish a classroom management system with each group of students	6.09	7.02	0.93*
Student Engagement				
Mn. Pre = 7.1 Mn. Post = 6.7 Diff. = – 0.38	Motivate students who show low interest in school work	6.75	6.85	0.11
	Get students to believe they can do well in school work	7.49	7.56	0.07
	Help your students to value learning	7.49	7.25	–0.24
	Assist families in helping their children to do well at school	6.47	5.00	–1.47*

*Significant difference

their self-efficacy before and after completion of their practicum. Through exploratory factor analysis we were able to distinguish two of the usual factors – classroom management and instructional strategies – and to compare them before and after the practicum.

In Table 3 we show how there was a significant perception of increased self-efficacy in three of the four items included in 'classroom management' and a significant decrease in one of those belonging to 'student engagement'.

For those items referring to teaching strategies, future teachers in general perceived themselves before and after their practicum experience as 'quite a bit' capable of 'providing an alternative explanation or examples when students are confused', 'crafting good questions for their students' and less so in 'using a variety of assessment strategies'. But after practicum they felt less capable of 'implementing alternative teaching strategies in their classroom' (Mn. 7.04/6.75).

During the interviews, several future teachers provided examples and described situations that help us to interpret these findings. For example, we learned that, with one exception, none of the 16 future teachers interviewed had the possibility of learning to work with parents by participating in a meeting with parents. In addition, the short length of actual responsible teaching time that some experienced limited their capacity to explore the use of a variety of teaching strategies.

Conclusions

Looking at what has emerged in this first phase of the teacher trajectory study, we feel able to assess its findings and implications from three perspectives: that of the new teachers themselves, that of their teacher education programmes and that of the education policy context.

From the side of the new teachers we studied, evidence from both the questionnaires and interviews showed that by the end of their studies almost all viewed themselves as teachers and would look for a job. Clearly being responsible for teaching and managing different kinds of students and classes impacted on how they assessed their capabilities, feeling slightly more efficacious in terms of classroom management and securing student engagement during lessons than they felt before their practicum experience. As we noted earlier, almost half of those who completed the questionnaire after practicum felt more satisfied about being able to contribute to student learning. In their final reflections most of the teachers interviewed recognised that although they were still far from what they considered to be a 'competent' teacher, they also felt they were on their way there: 'I now feel there is a lot of room for growth in different contexts, different situations, [but] I feel I have a solid base from which to start'. They grew to understand teaching as a relational process, moving from seeing their pupils 'as pieces of furniture in the room' to feeling that they could 'click' with them and to recognise that 'when you establish an affective bond, kids learn'. Furthermore, some challenged observed teaching practices on the basis of thinking about what it takes to learn: 'Questions in the national assessment require application and understanding of concepts. So if a teacher only requires pupils to complete formulae, is he really following the curriculum directions?'

All the teacher education institutions included in this study offered relatively adequate programmes of preparation, as we learnt in interviews with their heads. All, except one, had formed part of the FFID project referred to in the introduction to this paper. In turn, most of the new teachers we studied valued their preparation and were not overtly critical of it. Yet there were flaws in the programmes, as we gathered from responses to the second questionnaire and during interviews, touching on the practicum experience as well as the type of school in which future teachers were placed, which in some cases were not appropriate. In fact, two future teachers experienced a change of schools because of the lack of appropriate conditions. Some future teachers not only received

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insufficient university supervisory feedback during their practicum experience, but more importantly their mentoring experiences differed in the specificity of the help and feedback provided. Despite valuing teaching as a possible life career, two of those we interviewed had decided they would not look for a teaching position. During their practicum they had coped reasonably well with teaching demands, but their experience of teaching was in dysfunctional schools with poor mentoring quality.

As we review the results of the study to date and follow the new teachers into schools, what begins to stand out is the way in which teacher education effects intersect with the school conditions. What might seem a good preparation and a relatively good practicum experience in the eyes of the new teacher may in fact clash with challenging realities once he or she begins to teach. This disjunction appears in the narratives of the 'good' and 'bad' experiences we are hearing about from the teachers we are now following into schools:

> I chose this to tell, because it was an unexpected situation that happened in my classroom [a problem among students that the teacher could not manage] … During practicum nobody teaches the future teacher how to handle such events, or what one should do in cases like when a student reacts aggressively and defiantly against his classmates and teacher (Edison, secondary maths teacher).

Seen from the standpoint of how to secure capable teachers for the school system, the current tendency in Chilean educational policy, as in other countries, is to place emphasis on controls at the end of teacher preparation (content knowledge examinations) and to reward teacher education institutions that produce teachers who raise the test scores of the schools in which they teach (performance-based project funding). However, it would seem that these measures would not necessarily affect the preparation processes as such, and certainly do not provide a guarantee that a new teacher will perform adequately when she begins to teach. While, as we have seen, there is room for improvement in how teacher education is conducted, it is also true that the particularities of the contexts in which teachers begin to teach also qualify the extent to which young teachers may put their capacities to work and get the most out of their students. This is why Chilean macro policies, in addition to quality assurance mechanisms and other support for teacher education, need also to effectively improve working conditions and mentoring opportunities for new teachers. Otherwise, in searching for a job, new teachers may prefer the 'quieter' school with fewer problem students, over the vulnerable poorer schools in rural and marginal urban locations: 'a job, but not anywhere: I don't feel prepared to work anywhere. I don't think I have the capacity for this'.

The high proportion of teachers in Chile who leave the system in their first year of teaching (Valenzuela & Sevilla 2013), as well as other national contexts (Boyd *et al*. 2008; Grossman & Thompson 2004; Skaalvick & Skaalvick 2011), or who change schools because of inadequate conditions, suggests that teacher education institutions need to review the breadth and quality of their practicum experiences, and that policy-makers need to establish protection mechanisms for teachers in their first year of work. We hope the research evidence we are gathering on new teacher trajectories will assist in the process of improving teacher education as well as the implementation of targeted policy measures for new teachers.

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