Special Section Introduction: Research on teachers and inclusion issues in higher education

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This special section is the first of two which gather together a selection of papers based on research presented at the Third Interdisciplinary Conference on Research in Education (organized by the Center for Advanced Research in Education (CIAE) of the University of Chile and the Center for Studies in Educational Policy and Practice (CEPPE) of the Pontifical Catholic University of Chile) and at the Fourth Conference on Research in Higher Education (also co-organized by the Center for Comparative Policies in Education, CPCE, of Diego Portales University), held August 21-22, 2014 in Santiago, Chile. The theme of these conferences was defined as "the public sector and education: ideas, interests, and new institutions" and under the auspices of these events some 150 investigations were presented in the following areas: education policy, school improvement and educational leadership, pedagogy and teaching, neurosciences, cognition and learning, ICT and education, history of education, and higher education.

The papers collected in this first special section have two main focuses: on the one hand, teachers, their training, and professional insertion; and on the other, the dilemmas and problems for effective inclusion of students admitted to selective universities through equity-based admission mechanisms.

We considered it important to collect papers that referred to teaching in this first special section, given the importance that they have in current policies and will have in forthcoming changes expected in the Chilean education system. In all currents of opinion there is the feeling that improving conditions for the teaching profession is a priority in Chile, along with examining the conditions under which teacher training is provided, its quality, and efficacy, this being expressed in the way in which teachers deal with entry into the profession. However, beyond these assumptions, there is little evidence of how the combination of teacher training and professional development fits into the demands of classroom practice, particularly in the case of new teachers. The papers selected for this section begin to provide some of the evidence required.

In many national contexts educational policy debate is marked by important issues of inclusion, equity, and social justice, especially in higher education in Chile. This was evident during the Fourth Conference on Research in Higher Education, with 11 of the 20 papers presented being devoted to problems in the transition from secondary education to higher education, with special emphasis on issues of equity in access, equal opportunities to progress and complete studies, and the consequences of higher education in social mobility. Acknowledging that it has been difficult to offer equal opportunities of access to higher education to those with the capacity in an education system with a high level of segregation and with different quality for the various social strata, there has been experimentation with various ways to change the processes of admissions and to provide support and assistance to new students to enable greater social inclusion. The two papers on this topic, published in this issue, give accounts of relevant experiences in this field.

The teaching profession, its demands, and the influence of training and professional development on the way of facing them

It may not be coincidence that the central theme of the papers in this special section focus on the work of teachers in classrooms, the characterization of teachers who start working in the classroom, and where and how they begin to teach; as well as how these teachers approach their work and the diversity of school populations and the schools where they teach. This is in line with a long period of neglect in this area of investigation, which has only begun to change with recent research into teaching and beginning teachers, exemplified in the papers included in this special section. By addressing issues related to teaching practices and their improvement, whether for experienced or novice teachers, the papers agree on valuing the role of peer collaboration as a means of professional development. Studies in other contexts also highlight teacher collaboration using specific cases to assess its effectiveness (Vescio, as quoted in Avalos, 2011). These papers also highlight the importance and effectiveness of teacher education both directly or indirectly, based on the experience of new teachers and on actions carried out with pre-service teachers that are oriented to their cognitive development and their teaching strategies.

The central focuses of these six papers can be grouped into three categories related to the predominant theme of the texts, although there are also cross-cutting topics common to all of them. These categories are the following, and from them we can summarize the central tenets of each paper.

(a) The process of starting to teach and the way in which new teachers analyze their experiences, needs, and achievements (Flores & Ruffinelli).
(b) Improvement of teaching and the methods and processes that lead to positive results (González-Weil *et al.*, Cabello, and Topping & Tornero).
(c) Professional insertion of new teachers and characterization of their demographic and academic background, and teacher training *(*Ayala).

The process of starting to teach and the way in which new teachers analyze their experiences, needs, and achievements

In her paper *"Inducción de profesores novatos en Chile: un estudio de caso"* (*Induction of beginning teachers in Chile: a case study*), Catherine Flores presents one aspect of the results of her doctoral thesis regarding what she calls induction, this being understood as the process of entering the teaching profession and the formal or informal support received. Using Kemmis et al. (2010) definition of practice as "cooperative and socially established human activities", Flores uses three words to organize her analysis of the practice of induction: the "sayings" that actors use to describe it, the "doings" defined as the actions and activities that take place within it, and the "relatings" between people who mediate the whole process. The subjects of her study were 29 teachers starting work at municipal schools, subsidized private schools, and private schools in the city of Copiapó in northern Chile. She interviewed them about their experiences of professional insertion once in person and twice electronically. Based on the interviews, she organizes her presentation of results in terms of the "sayings", "doings" and "relatings". What these teachers describe about their experience does not differ from findings in other studies in Chile (Avalos & Aylwin, 2007; Avalos & Bascopé, 2014) and in other international contexts regarding the kinds of difficulties faced. In this respect, Flores concludes that their statements are predictable: problems with managing

classes, handling administrative routines, relationships with parents, serving students with special needs, adequately representing the content of teaching, and the pressure of standardized tests (SIMCE), among others. But they also note the pressures arising from their working conditions, such as lack of time. What does provide new evidence is the analysis of the role of relationships with colleagues and authorities in the process of facing challenges and new learning, all located in the sphere of the "relational". Even more novel is evidence provided by actions or "doings", such as actively seeking new sources of improvement and learning in existing networks outside the school, advanced training courses, and consultation with other teachers. Flores underlines the importance of the latter, as this reveals a significant degree of professionalism in development that   induction policies.

Andrea Ruffinelli's study, entitled "*¿Qué aprenden los docentes en su primer año de ejercicio profesional?: representaciones de los propios docentes principiantes* (*What do teachers learn in their first year of professional employment?: Beginning teachers' own accounts*), which also focuses on teachers in their first year of employment, specifically centers on the way in which they articulate what they consider to be learning based on their practice, conceptualizing it as "accounts" of that practice. To study these accounts, Ruffinelli uses interviews on classes recorded at the end of their first year of employment. Although the focus was on teaching, the teachers studied noted that most learning occurred in relation to the practice or management of conflictive teaching situations derived from the context (similar to the problem situations in Flores's study) rather than the curricula content. Based on the interviews, Ruffinelli also notes the interaction between pedagogic cultures and the socioeconomic status of schools with what is learned during teacher training. For example, initial teacher training regarding the use of various methods of classroom assessment or planning was not useful for teachers working in establishments that focus only on the results of specific tests or which have specific planning formats. The author makes comparisons depending on the degree of selectivity of these teacher education institutions, but reaches the conclusion that that mediation of the contexts makes it difficult to postulate unidirectional relationships regarding the types of institutions. In this sense, rather than providing evidence for teacher education, the study as a whole raises interesting questions about the way in which insertion into the profession takes place and the need to provide opportunities for new teachers to share their experiences about it with those who train them.

Improvement of teaching and the methods and processes that lead to positive results

The papers grouped in this topic share an interest in effective methods of teacher professional development and of higher cognitive skills for conceptual understanding, all with reference to the sciences.

In their paper "*Contribución del trabajo colaborativo en la reflexión docente y en la transformación de las prácticas pedagógicas de profesores de ciencia escolares y universitarios*" (*Contribution of collaborative work in teacher reflection and in the transformation of the pedagogical practices of school and university science teachers)*, the authors Corina González-Weil, Melanie Gómez Waring, Germán Ahumada Albalay, Paulina Bravo González, Exequiel Salinas Tapia, Damián Avilés Cisternas, José Luis Pérez, and Jonathan Santana Valenzuela provide a summary of an extensive experience of collaborative work aimed at improving practices in teaching the sciences. Through biweekly meetings held over a year, a group of teachers and researchers in the Valparaiso Region engaged in action-research focused on professional growth and improvement of practices. In light of the initial question posed by the group and with reference to "the needs of students and the local community related to science education ", the participants contributed ideas and reflections, recounted their experiences, and learned from them. Using video recordings of the sessions, documents produced by the participants, classroom materials, and logs, among other things, the authors analyzed the learning of these teachers, using coding strategies and content analysis. Their conclusions lead them to formulate five effective principles for teachers' professional development, which constitute the essence of the paper. Analysis of these principles shows that they respond well to the objectives of personal, social, and professional development attributed by Bell and Gilbert (1996) to effective continuous teacher training programs. These same principles underpinned the successful professional development program for teachers in secondary education conducted by Chile's Ministry of Education a few years ago, which was known as "Professional Working Groups" (Ávalos, 1998).

The conjunction between a training tool and teachers' acquisition of skills to teach sciences during training is the subject of the paper by Cabello and Topping entitled "*Aprender a explicar conceptos científicos*

en la formación inicial docente: un estudio de las explicaciones conceptuales de profesores en formación, su modificabilidad y su transferencia"(*Learning to explain scientific concepts in initial teacher training: a study of the conceptual explanations of teachers in training, their modifiability and transfer*). The paper describes a quasi-experimental study focused on the use of explanation in science teaching and the role that peer assessment plays in its improvement. Twenty basic education teachers in their final year of teacher training took part and a group of them was monitored at the end of their first year of employment. The first phase prepared future teachers to be able to self-assess and evaluate others regarding the explanation of scientific concepts, including feedback and discussion processes, all in a total of eight sessions. The second phase studied the degree to which these teachers, now exercising their profession, retained what they had previously developed. Two things stand out among the main findings. The first is that the ability to improve explanatory skills for scientific concepts does not seem to depend on the amount of scientific knowledge of future teachers, as they achieve similar improvements despite studying in different training programs with differing emphases on the sciences. The second interesting finding is that the level of change achieved is focused on the clarity of the explanation and the connection with the previous ideas of students (something which is fundamental in teaching science), but not on the use of metaphors, analogies, models, or by building on errors of students, which are the principles of constructivist teaching. To achieve these may require additional training in these skills. As regards the teachers already in service, the authors note the confluence between what they know and what they are able to do regarding explanations and the effect of teaching contexts, which in requiring much of their attention may distract teachers from actual teaching.

Unlike the previous articles, Bernardita Tornero's paper, entitled *"La experiencia de usar un programa de aceleración cognitiva con futuros profesores de tres universidades chilenas"* (*The experience of using a cognitive acceleration program with future teachers of three Chilean universities*), describes a quasi-experimental study aimed at developing formal reasoning skills in future teachers of primary education in three Chilean universities. The study was based on a cognitive acceleration program in mathematics conducted among secondary students in the United Kingdom, which used a set of collaborative dialogic activities between the participants with the mediation of a teacher. An experimental group was formed based on those who consented to take part, while a control group was formed from those who chose not to participate. The training activities took place over the course of one semester and a Science Reasoning Task Test was applied at the beginning and end of the treatment to measure the effects. The author describes the way in which the procedure used in the United Kingdom was adapted and the skills measured by the test, although without detailing the actual experience. At the end of the treatment, the future teachers showed significant achievements in the development of the skills measured, which in turn proved to be comparatively and significantly better than those in the control group. In an interesting discussion of the results, the author underlines the usefulness of the treatment for cognitive progress, but noted various limitations related, inter alia, to the possible influence of maturation factors during the five month period pre-and post-test or the influences of other courses in their training curriculum.

Professional insertion of new teachers and characterization of their demographic and academic background and teacher training

Differing from the papers mentioned previously, the paper presented by Pamela Ayala, entitled *"Inserción laboral docente: ¿una oportunidad perdida para la Formación Inicial Docente?"* (*Insertion into the teaching profession: A missed opportunity for Initial Teacher Training?*), uses existing databases to study the conditions in which teachers who graduated between 2007 and 2011 began to teach. It centers on the relations between their school context conditions and their demographic, academic, and initial training characteristics. In general, as stated in the paper, in academic and demographic characteristics these teachers do not differ much from what we already know generally about young teacher characteristics (lower academic and socio-economic background compared to other professions). It is interesting that most of those graduating in the period come from daytime teacher education programs (more than 80%), compared with distance or semi-distance programs, which may be the effect of the decision to close such programs on ministerial recommendations. Regarding insertion into the labor market, Ayala finds a greater probability of being employed for graduates from regional universities than for those in the Metropolitan Region of Santiago, even though the latter region produces the largest number of graduates. Examining the teaching career of these graduates, the study notes that almost half /remain in the labor market permanently and just over a third fluctuates between being or not being employed in a school.

The study draws conclusions that are interesting to the extent that they challenge certain assumptions, such as the importance of academic background for remaining in the system (those with the best academic background have an almost equal chance of remaining in the system as those that do not) and that those who studied at selective universities tend to abandon the profession more than those who did not.

Finally, the papers on higher education that conclude the special section share a focus on what happens with students who enter higher education through special admissions programs for disadvantaged students in two selective universities. The papers examine the situation of these students who, while being high performers in secondary school, do not achieve the minimum university entry scores required by these institutions.

In the paper "*Experiencia de transición de la secundaria a la universidad de estudiantes admitidos en una universidad tradicional chilena (CRUCH) vía admisión especial de carácter inclusivo" (Experience of transition from secondary school to university for students admitted to a traditional Chilean university (CRUCH) via special admission of an inclusive nature)*, Gonzalo Gallardo, Amaya Lorca, Daniela Morrás, and Martín Vergara describe the experience of the special admission program "Talento+Inclusión" (Talent+Inclusion in English) of the Pontifical Catholic University of Chile. The authors chose as their focus the reflections of students participating in this program, based on the accounts of their first year at university. Their experiences of admission and of the first year of study are described as periods or phases of transition into full university belongingness, showing variations in the students' wellbeing. Also studied is the impact of differences between the cultures of the group of young entrants and of the social environment that receives them as well as the effects in terms of inclusion, promotion of learning, and students' sense of belonging to their university. Particularly interesting is the distinction provided by the researchers between aspects of youth cultures these freshmen feel they can control, and other dimensions of juvenile culture they experience as unchangeable.

In their paper "*Equidad y diversidad en universidades selectivas: La experiencia de estudiantes con ingresos especiales en las carreras de la salud*" (*Equity and diversity in selective colleges: The experience of special-admission students studying health degrees*), Viviana Sobrero, Rodrigo Lara-Quinteros, Paola Méndez, and Bárbara Suazo describe the experience of the University of Chile's Faculty of Medicine with its equity and inclusion program, known as the Priority Access System for Educational Equity (SIPEE, by its Spanish acronym). This study shares with the former one a qualitative methodology used to identify and describe the experiences of students who have been part of the program for one year. Among other aspects, this study describes the diverse valuation that students give to the strategies of academic support and the way in which traditional academic codes deployed on non-traditional students, "could be promoting educational practices that continue to infringe the rights of less favored groups and to generate new types of exclusion."

The urge to compare the two papers is unavoidable. We highlight just two of the shared findings—the importance of the attitude of professors towards their equal- admission students, and the danger that the method of admission become crystallized as a differentiating label —and we invite readers to delve deeper into the lessons provided by these two papers.

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