

CENTER FOR ADVANCED RESEARCH IN EDUCATION
2nd YEAR REPORT
JULY 2009 – JULY 2010

I. PRESENTATION

CENTER NAME		CODE
<i>Center for Advanced Research in Education</i>		<i>CIE-05</i>
DIRECTOR	SIGNATURE	
<i>Rafael Correa Fontecilla</i>		
ACADEMIC DIRECTOR	SIGNATURE	
<i>Alejandra Mizala Salces</i>		
CONTACT INFORMATION		
<i>Periodista José Carrasco Tapia #75, Santiago - Santiago - 978 2762 - 978 2775</i>		
MAIN INSTITUTION		
<i>Universidad de Chile</i>		
PERIOD INFORMED		
<i>Jul-2009 – Jul-2010</i>		

a) Main researchers' information

FULL NAME	SIGNATURE
Abelardo Castro Hidalgo	

FULL NAME	SIGNATURE
Carmen Montecinos Sanhueza	

FULL NAME	SIGNATURE
Jaime Sanchez Ilabaca	

FULL NAME	SIGNATURE
Jorge Antonio Soto Andrade	

FULL NAME	SIGNATURE
Marcela Peña Garay	

b) Associated researchers' information

UNIVERSIDAD DE CHILE

- Roberto Araya, Ph.D. (Electrical Engineering), University of California-Los Angeles, USA.
- Jenny Ássaël, Bachelor (Psychology), University of Chile, Chile.
- Raúl Atria, Ph.D (Sociology), Columbia University, USA.
- Beatrice Ávalos, Ph.D. (Education, Philosophy and History), University of Saint Louis, USA.
- Felipe Balmaceda, Ph.D. (Economics), Cornell University, USA.
- Rodrigo Baño, Bachelor (Sociology), University of Chile, Chile.
- Cristián Bellei, PhD (Education), Harvard University, USA.
- Carlos Cáceres, Master (Economics), University of Pennsylvania, USA and Master (Escolatin Economics), University of Chile.
- Carmen Julia Coloma, Master's (Letters and Special Education), Pontificia Universidad Católica de Chile, Chile.
- Lino Cubillos, Master's (Educational Administration), Universidad de Antofagasta, Chile.
- Dante Contreras, Ph.D. (Economics), University of California-Los Angeles, USA.
- Pablo Dartnell, Ph.D (Mathematics), Yale University, USA.
- Rosa Devés, Ph.D. (Biochemistry), University of Western Ontario, Canada.
- Patricio Felmer, Ph.D. (Mathematics), University of Wisconsin-Madison, USA.
- Pablo González, Ph.D. (Economics), Cambridge University, U.K.
- Luis Guerrero, Ph.D. (Computer Sciences), Pontificia Universidad Católica de Chile, Chile.
- Alexandre Janiak, Ph.D. (Economics), Université Libre de Bruselas, Belgium-Institute of Political Science, Paris, France.
- Osvaldo Larrañaga, PhD (Economics), University of Pennsylvania, USA.
- Nancy Lacourly, Doctor (Mathematical Statistics), Université de Paris, France.
- Mattia Makovec, Ph.D. (Economics), Universidad de Bocconi, Italy.
- Patricio Meller, Ph.D. (Economics), University of California-Berkeley, USA.
- Eduardo Morales, Bachelor (Sociology), University of Chile, Chile.
- Javier Núñez, Ph.D. (Economics), Oxford University, UK.
- Marcela Pardo, M.A. (Early Childhood Development), Boston College, USA.
- Jesús Redondo, PhD (Philosophy and Science of Education), Universidad de Deusto, Spain.
- Mauricio Sáenz, Master (Science, specialization Computation), University of Chile, Chile.

- Andrea Slachevsky, Doctor in Sciences (Brain, Behaviour and Conduct), Université Pierre et Marie Curie, Paris VI, France.
- Carmen Sotomayor, Doctor (Pedagogy of First Language), Université Catholique de Louvain, Belgium.
- Eric Tanter, Doctor (Computer Sciences), Université de Nantes, Francia and Universidad de Chile (2004)
- Juan Pablo Valenzuela, Ph.D. (Economics), University of Michigan- Ann Arbor, USA.
- María Leonor Varas, Doctor (Engineering Sciences), University of Chile, Chile.
- Benjamín Villena, Ph.D. (Economics), University of Rochester, USA.
- Ennio Vivaldi, Medical Doctor, University of Chile, Chile; Ph.D. (Chronobiology), Harvard University, USA.

PONTIFICIA UNIVERSIDAD CATÓLICA DE VALPARAÍSO

- Luis Ahumada, Doctor (Psychology), Universidad Autónoma de Madrid, Spain.
- Atilio Bustos, Doctor (Information – Sciencimetrics), Universidad de Granada, Spain.
- Corina González, Doctor (Sciences, Biology Didactics), Munich University (LMU), Germany.
- Romualdo Ibañez, Doctor (Linguistic), P. Universidad Católica de Valparaíso, Chile.
- Verónica López, Doctor (Psychology), Universidad Autónoma de Madrid, Spain.
- Arturo Mena, Doctoral candidate (Mathematics), University of Iowa, USA.
- Eduardo Meyer, Ph.D. (Engineering Sciences), Lehigh University, USA.
- Raimundo Olfo, Ph.D. (Education), University of Wales, U.K.
- Giovanni Parodi, Doctor (Linguistics), Pontifical Catholic University of Valparaíso, Chile.
- Vicente Sisto, Doctor (Social Psychology), Universidad Autónoma de Barcelona, Spain.
- Nelson Vásquez, Doctor (History and Social Sciences Didactics), Universidad de Barcelona, Spain

UNIVERSIDAD DE CONCEPCIÓN

- Luis Aguayo, Ph.D. (Sciences, Pharmacology), University of Maryland, USA.
- Carmen Domínguez, Doctor (Public Communication), Universidad de Navarra, Spain.
- Jorge Dresdner, Ph.D. (Economics), Uppsala University, Sweden.
- Beatriz Figueroa, Doctor (Education), University of Concepcion, Chile.
- César Flores, Doctor (Engineering Sciences), University of Chile, Chile.

- Carlos Muñoz, Doctor (Education), University of Concepcion, Chile.
- Cecilia Núñez, Ph.D. (Education), University of Massachusetts-Amherst, USA.
- Ricardo Sánchez, Ph.D. (Electrical Engineering), Ohio State University, USA.
- María Inés Solar, Doctor (Philosophy and Educational Sciences), Universidad Nacional UNED, Spain.
- Miguel Ripoll, Doctor (Psychology), Universidad de Barcelona, Spain
- Jorge Ulloa, Doctoral Candidate (Education) Universidad de Córdoba, Spain.
- Jorge Valdivia, PDD (Education Sciences), Universidad Nacional de Educación a Distancia- UNED

UNIVERSIDAD DE TALCA, INSTITUTO DE INVESTIGACIÓN Y DESARROLLO EDUCACIONAL

- Oscar Corvalán, Ph.D. (Education), University of Toronto, Canada.
- Sebastián Donoso, Doctor (Education), Universidad Academia de Humanismo Cristiano, Chile.

CEDEP

- Marta Edwards, Bachelor (Psychology), Pontificia Universidad Católica de Chile, Chile.

II. INDEX

I.	PRESENTATION	1
A)	MAIN RESEARCHERS' INFORMATION	2
B)	ASSOCIATED RESEARCHERS' INFORMATION.....	3
II.	INDEX.....	6
III.	EXECUTIVE SUMMARY	7
IV.	RESUMEN EJECUTIVO	11
V.	RESULTS IN RESEARCH.....	15
VI.	OUTPUTS	31
1.	PUBLICATIONS	31
2.	CONTRIBUTION TO HUMAN CAPITAL FORMATION	38
3.	NATIONAL COOPERATION	48
4.	INTERNATIONAL COOPERATION	49
5.	DISSEMINATION AND DISCLOSURE	51
6.	TRANSFER AND LINKAGES.....	70
VII.	LESSONS LEARNED.....	76
VIII.	APPENDICES	77

III. EXECUTIVE SUMMARY

The Center for Advanced Research in Education seeks to strengthen the contribution and impact of universities *Universidad de Chile*, *Pontificia Universidad Católica de Valparaíso* and *Universidad de Concepción* on the country's education. The Center's overall purpose is to contribute, from an academic base, to the improvement of education in Chile. To this end, the Center has as its mission to carry out research and development activities with a focus on policy development, educational management, and teaching and teacher education.

The Center is a multidisciplinary unit, promoting excellence and engaging in joint activities with the Chilean school system. The Center encourages the establishment of networks among academics in different institutions. The Center's development strategy has been to constitute a stable team of researchers; to conduct an intensive program for the training of new researchers; to enhance post graduate programs related to education; to create research networks with national and international universities and research centers; and to provide a communications focal point for academics, social players and policy makers' debate and discussion. The transference of research findings to improve the school system and public policy is a priority.

The Center is organized into five areas, namely: Educational Policies; Teacher Quality; Teaching & Learning; Cognitive Sciences & Neuroscience applied to Education; and Learning, Cognition, Information Technologies & the Brain. All five areas are involved in basic and applied research as well as in development and outreach activities. These areas collaborate with each other around the lines of research fields and specific projects under way.

The defined objectives of the Center are:

- To generate knowledge and collaboration so that educational policies and programs, as well as their management, are increasingly based on scientific evidence
- To generate knowledge about the main factors that influence teacher quality, both their initial and continual professional development as well as the teachers' labor market characteristics
- To develop knowledge about cognition and classroom teaching in order to introduce innovations into the curriculum and school evaluations
- To generate knowledge to enhance understanding of cognitive models and neuronal mechanisms underlying successful and unsuccessful learning
- To investigate the relationship between technology, education and learning, with an applied focus on groups of students with special needs.

RESULTS IN RESEARCH

Today the Center for Advanced Research in Education (CIAE) is undertaking 22 research projects funded directly through the Associate Research Program of the Chilean National Commission for Science and Technology, (CONICYT) with 65 researchers participating from six Schools of *Universidad de Chile*, together with those of the *Pontificia Universidad Católica de Valparaíso* and the *Universidad de Concepción*¹.

¹ Researchers from the Center for Studies in Psychosocial Development and Stimulation (CEDEP) and the Institute for Research and Educational Development of *Universidad de Talca* also participate.

In addition, there has been an emphasis on applying to competitive research funds granted by various programs. Thus, the researchers of the Center have been awarded grants from: AKA CONICYT *Cooperation Chile-Finland*; the Fund for Scientific and Technological Research (FONDECYT) for 6 research projects; the Center also gets funding from the Ministry of Planning for the development of a research nucleus within the framework of its Scientific Millennium Initiative; grants from the Fund to Stimulate Scientific and Technologic Development (FONDEF) for 4 research and development projects; funding for 1 project from the Ministry of Education's National Fund for Research and Educational Development (FONIDE) and grants for one project from international foundations. The Center has been awarded various projects to advise the Ministry of Education, that are highly pertinent for current public policy in education (for details, please see Appendix 3 of the report). It has also developed projects at the regional level at the request of the Regional Development Under Secretariat. From its inception, the emphasis has been placed on innovative projects that have relevant research content.

OUTPUT OF THE CENTER'S SECOND YEAR OF OPERATION

1) Publications

- Journals indexed by ISI
 - 12 articles accepted
 - 11 articles submitted
- 2 articles published in other international journals
- 10 full-length papers in International Conference Proceedings
- 15 articles published in national circulation journals
- 3 edited books
- 17 book chapters

2) Contribution to Human Capital Formation

Courses

- 29 courses given
- Last year the Center was awarded a US\$1.2 million grant by the James S. McDonnell Foundation to organize three **International Summer Schools in Cognitive Sciences, Neuroscience and Education**, to contribute to the specialization of a new generation of neuroscientists in educational skills. The first summer school will be held next March, since the one that was planned for March 2010 had to be postponed due to the earthquake that devastated the country last February.

Dissertations and theses

- Doctoral dissertations and Master's theses
 - 2 completed Doctoral dissertations
 - 17 Doctoral dissertations in progress
 - 9 completed Masters' theses
 - 12 Masters' theses in progress
- Undergraduate theses
 - 17 completed theses
 - 1 thesis in progress

Young Researchers

- The Center has 19 young researchers
- 4 of them will enroll in postgraduate programs this year.
- 3 are applying for scholarships to start postgraduate studies in 2011

Postdoctoral Fellows

- The Center has 2 postdoctoral fellows.

3) National cooperation

- The Center has cooperated with other universities, research centers and student associations nationwide, through 4 projects.

4) International cooperation

Visiting scholars

- 19 visiting scholars

CIAE researchers' visits abroad

- 12 visits

5) Dissemination and disclosure

Participation in seminars and conferences

- 81 presentations in international conferences
- 45 presentations in national conferences

Organization of seminars and conferences

- 18 internal seminars
- 4 national external seminars
- 2 national Conferences
- 1 international seminar
- 2 international conferences

Op-ed articles and media appearances

- 10 op-ed articles
- 60 other media appearances in radio, television and newspapers interviews

6) Transfer and Linkages

Five web sites have been developed as a result of research projects; these web sites provide support material to teachers and students:

- www.registroate.cl
- www.asistenciatecnicaeducativa.cl
- www.metaforas.cl
- www.amathis.cl
- www.c5.cl/ticedu/

The Center has a close relationship with the school system, some of the activities carried out this year include:

- Two Mathematics Tournaments with the participation of students from first grade to tenth grade.
- Ten projects developed at CIAE are directly interrelated to the educational system: Ministry of Education, schools, principals, teachers and students (see Appendix 3)
- Thirteen dissemination seminars to policy-makers, school principals, teachers and students

IV. RESUMEN EJECUTIVO

El centro de Estudios Avanzados en Educación busca fortalecer el aporte e impacto de las Universidades de Chile, Pontificia Universidad Católica de Valparaíso y de Concepción a la educación del país, mediante el desarrollo de investigación de excelencia en este campo. Sus actividades tienen como norte generar conocimiento que dé soporte científico y tecnológico a la discusión y diseño de políticas públicas en el sector educación, a la gestión de los procesos educativos y a las actividades de formación y enseñanza que se desarrollan en el sistema educativo.

El Centro tiene una perspectiva multidisciplinaria, integrada a la mejor investigación que se realiza en las Universidades de Chile, Católica de Valparaíso y Concepción, estrechamente vinculada con el medio escolar, profesional y con las políticas públicas. Su estrategia de desarrollo ha sido constituir un equipo estable de investigadores y un programa intensivo de formación de nuevos investigadores, potenciar los programas de postgrado vinculados con educación, articular redes de trabajo con universidades nacionales y extranjeras, y abrir espacios de diálogo y comunicación con la comunidad académica y los actores sociales.

El Centro se organiza en 5 áreas: Políticas Educativas; Docentes; Enseñanza y Aprendizaje; Ciencias Cognitivas y Neurociencias Aplicadas a la Educación; y Aprendizaje, Cognición, Tecnologías de la Información y Cerebro. En todas ellas se realiza investigación fundamental y aplicada, desarrollo y transferencia de sus productos y resultados. Las áreas también colaboran entre sí, en torno a las líneas de investigación y a proyectos específicos que se desarrollan.

Los objetivos específicos del Centro son:

- Generar conocimiento y colaborar para que las políticas y programas del sector, así como la gestión educativa, estén crecientemente basados en evidencia científica
- Generar conocimiento sobre los principales factores que inciden en la calidad de los docentes, en cuanto a su formación inicial y continua y a las características de su mercado laboral
- Generar conocimiento de los procesos de cognición y de enseñanza en el aula a fin de introducir innovaciones en el currículo y en los sistemas de evaluación escolar
- Generar conocimiento que contribuya a comprender los modelos cognitivos y los mecanismos neuronales que subyacen a los aprendizajes exitosos y aquellos malogrados
- Investigar la relación entre la tecnología, la educación y el aprendizaje, con especial énfasis en una línea orientada a discapacitados, entre otras.

RESULTADOS EN INVESTIGACIÓN

Actualmente, el Centro de Investigación Avanzada en Educación está realizando 22 proyectos de investigación financiados por los recursos del Programa de Investigación Asociativa de CONICYT en el que participan 65 investigadores provenientes de 6

Facultades de la Universidad de Chile, así como de la Pontificia Universidad Católica de Valparaíso y la Universidad de Concepción².

Adicionalmente, se ha puesto énfasis en la obtención de proyectos concursables del sistema nacional de Ciencia, Tecnología e Innovación. Los investigadores del Centro se han adjudicado: Fondos de Cooperación Chile-Finlandia AKA -CONICYT, 6 proyectos FONDECYT (Fondo de Investigación Científica y Tecnológica), un Núcleo Científico Milenio del Ministerio de Planificación, 4 proyectos FONDEF (Fondo de Desarrollo), 1 proyecto del Fondo Nacional de Investigación y Desarrollo Educativo (FONIDE) y fondos para un proyecto de Fundaciones Internacionales. Asimismo, el Centro se ha adjudicado diversos proyectos de asesoría para el Ministerio de Educación de gran relevancia para las actuales políticas públicas en Educación (ver detalles en Apéndice 3 del informe). Al mismo tiempo, desarrolla otros proyectos de alcance regional solicitados por la Subsecretaría de Desarrollo Regional (ver detalles en el Informe). Desde un comienzo se ha puesto énfasis en que todos los proyectos que se desarrollan deben ser innovadores y tener un contenido en investigación.

PRODUCTOS DEL SEGUNDO AÑO DE OPERACIÓN DEL CENTRO

1) Publicaciones

- Revistas indexadas por ISI
 - 12 trabajos aceptados
 - 11 trabajos enviados
- 2 trabajos publicados en otras revistas internacionales
- 10 trabajos publicados en Actas de Conferencias Internacionales
- 15 trabajos publicados en revistas nacionales
- 3 libros editados
- 17 capítulos de libro

2) Formación de Capital Humano

Cursos dictados

- 29 cursos dictados
- El grant obtenido de la James S. McDonnell Foundation por US\$ 1,2 millones permitirá organizar tres versiones (2011, 2012 y 2013) de una Escuela de Verano Internacional en Ciencias Cognitivas, Neurociencia y Educación, el que permitirá la formación de nuevas generaciones de neurocientistas dedicadas a la educación. La primera versión originalmente programada para marzo del 2010 tuvo que posponerse debido al terremoto de febrero pasado.

Tesis

- Tesis de Magister y Doctorado
 - 2 tesis de Doctorado terminadas
 - 17 tesis de doctorado en curso
 - 9 tesis de Magister terminadas
 - 12 tesis de Magister en curso

² Participan también investigadores asociados del Centro de Estudios de Desarrollo y Estimulación Psicosocial (CEDEP) y del Instituto de Investigación y Desarrollo Educacional de la Universidad de Talca.

- Tesis de pregrado
 - 17 tesis de pregrado terminadas
 - 1 tesis de pregrado en curso

Investigadores jóvenes

- El centro tiene 19 investigadores jóvenes
- 4 iniciarán programas de postgrados en el extranjero a partir de este año
- 3 están postulando a becas para iniciar estudios de postgrado el próximo año 2011

Post doctorados

- El Centro tiene 2 investigadores postdoctorados

3) Cooperación nacional

- El Centro ha cooperado con otras universidades, centros de investigación y asociaciones de estudiantes a nivel nacional, a través de 4 proyectos.

4) Cooperación internacional

Visitas desde el exterior

- 19 visitantes del exterior

Visitas al exterior

- 12 visitas de investigadores del CIAE

5) Diseminación de resultados de investigación

Participación en seminarios y conferencias

- 81 conferencias internacionales
- 45 conferencias nacionales

Organización de seminarios, mesas redondas y conferencias

- 18 seminarios internos
- 4 seminarios/talleres externos nacionales
- 2 conferencias nacionales
- 1 seminario internacional
- 2 conferencias internacionales

Apariciones en la prensa

- 10 Columnas de opinión
- 60 otras apariciones en la prensa en entrevistas en la radio, televisión y diarios

6) Transferencia al medio externo

Se han implementado 5 sitios WEB producto de los proyectos de investigación que se están desarrollando:

- www.registroate.cl
- www.asistenciatecnicaeducativa.cl
- www.metaforas.cl
- www.amathis.cl
- www.nucleomilenio.cl

El Centro tiene una relación muy cercana con el sistema escolar; algunas de las actividades realizadas este año incluyen:

- Dos nuevos Torneos de matemáticas, con la participación de alumnos entre 1º de enseñanza básica y 2º de enseñanza media.
- Se han realizado 10 proyectos que interactúan directamente con el sistema escolar, en los que se ha trabajado con directores, profesores y estudiantes (ver Anexo 3).
- Se han realizado 13 seminarios orientados a tomadores de decisiones, directores, profesores y estudiantes. También se han realizado seminarios orientados a las facultades de educación del país.

V. RESULTS IN RESEARCH

The Center for Advanced Research in Education (CIAE) has a multidisciplinary approach, integrated to the best research that is conducted by *Universidad de Chile* and associated universities (*Pontificia Universidad Católica de Valparaíso* and *Universidad de Concepción*), closely linked to the school and professional environment, and to public policies. Its development strategy has been aimed at constituting a stable team of researchers, a network of researchers in different faculties of *Universidad de Chile* and associated universities, as well as an intensive training program for new researchers. It has articulated work networks among associated universities and national and foreign universities, and opened spaces for dialogue and communication with the academic community and stakeholders.

The Center is organized into five areas, namely: Educational Policies, Teacher Quality, Teaching & Learning, Cognitive Science & Neuroscience Applied to Education; and Learning, Cognition, Information Technology, and the Brain. They all carry out fundamental and applied research, development and transfer of their outputs and outcomes. The areas also collaborate with one another around the lines of research and specific projects under way. The list of specific projects being developed with funding from the PIA-CONICYT is included in the Annex to this report of advance of the second year.

Below we outline the objectives and lines of research for each area and then summarize the main results achieved to date, mentioning the papers published or in progress in each case.

EDUCATIONAL POLICIES

The success of policy and educational management depends on the quality of their design and implementation strategies. These in turn are influenced by strong social, cultural and institutional factors that explain the technical complexity of the process. Thus, to generate effective policies it is necessary to draw on: (i) substantive knowledge about the problem to be resolved and valid alternatives to deal with it; (ii) rigorous technical design and contextually relevant and viable strategies; and (iii) monitoring and evaluation procedures. The goal of the Educational Policy Area is to produce research referred to these needs and to work with the education sector so that its policies, programs and educational strategies are increasingly based on scientific evidence. This area entails four research strands: the educational system; local educational administration and strategy; educational outcomes; and post-secondary education policies.

Educational System

In relation to the educational system, some researchers have examined how the existence of private provision of education affects the policy process in ongoing efforts to reform and regulate the system. One of the expected results of the decentralized market model is that it would disperse stakeholders and allow them to pursue their interests individually through choice and exit, and thereby take pressure off the central state to provide policy direction. The research concludes that this dispersion and decentralization was clearly not the outcome in Chile, in part because changes after 1990 introduced more centralized elements, especially teacher salaries, hiring, and firing in the public sector. Besides salaries and curriculum, the central government passed a long series of significant reforms showing that overall policy also emanated from the center.

So, despite the fact that around 50 percent of children are enrolled in privately owned schools and the other 50 percent are in the charge of local governments, stakeholders continue to hold the central government responsible for educational outcomes. When students or teachers take to the streets the target of their protests is not their local school districts but the national government. The disjuncture between intense activity by the national government and national stakeholders versus local inaction also reflects the predominant views in public opinion surveys that show parents to be happy with the school attended by their children, but dissatisfied with the overall educational system. The combination of these centralizing tendencies with the overall decentralized framework of a voucher system with private providers greatly complicated the generic challenges of institutional coherence and related principal-agent dilemmas (Mizala and Schneider, 2010)

Local Educational Administration and Strategy

In relation to local educational administration, we examined the performance of establishments and local school districts through the Data Envelopment Analysis (DEA). The study focused on 2,166 municipal establishments in the urban sector of the country, and determined an efficiency coefficient for each establishment. The results show that, in general, there is great variability in the performance of establishments of a same municipality, which accounts for a rather limited impact of the management by providers of private education on the establishments in their charge, where the results depend fundamentally on the individual efforts of some establishments. It is noteworthy that efficient municipalities, that is, those with a majority of schools with high efficiency coefficients, are not necessarily the less vulnerable. By further investigation through interviews in some municipalities, a systematic relationship was found between good management practices and high performance as measured by the efficiency coefficient. Municipalities classified as high performing have competent and committed management teams and strong backing from the Mayor (Benedetti and Mizala, 2010).

In terms of policy implementation, we examined organizational aspects of the implementation of the SEP Law (*Subvención Educacional Preferencial*, Preferential Educational Subsidy) which allocates extra money to those schools attended by low-income students. A rural district with seven public elementary schools participated in the study, through active semi-structured interviews and focus groups as data-gathering techniques. Results highlight difficulties in the implementation of externally mandated programs for school improvement that have inadequately and equivocally combined top-down and bottom-up approaches. Better serving low income communities will require that the communities themselves develop capacity to advocate for an education with equity and quality (Ahumada et al, 2010).

Educational Outcomes

In terms of educational outcomes, first, the effect of private voucher education on student performance has been revisited using new data on Chilean students and a novel identification strategy. Most schools in Chile provide either primary or secondary education. Thus, it is possible to analyze the effect of private voucher education on students that are forced to enroll in a different school to attend secondary education after graduating from primary schooling –structural switches. Moreover, the data set used contains information on previous academic achievement and thus allows the researchers to identify differences in students' unobservable characteristics. Using a number of propensity score based econometric techniques and changes-in-changes estimation

methods it is found that private voucher education leads to small, sometimes not statistically significant differences in academic performance. The estimated effect of private voucher education amounts to about 4 to 6 percent of one standard deviation in test scores. The literature on Chile based on cross sectional data had previously found positive effects of about 15 to 20 percent of one standard deviation (Lara, Mizala and Repetto, 2009).

Second, the causes of the improved performance of Chilean students in PISA 2006 with respect to PISA 2001 were investigated using the PISA data, techniques of decomposition of differences in results. The findings reveal that i) little more than two thirds of the improvement in PISA results are due to an increase in resources available to students, while the remaining third obeys to improved efficiency in the use of such resources, ii) the main factors behind this improvement are an increase in the schooling of Chilean students, associated with a lower disadvantage of repeating students, and a greater return achieved by the “peer-effect” (average socioeconomic conditions of peers), iii) additional factors were the better outcome of girls and the effect of expanding the Full School Day, iv) in general terms, while the increase in resources available has had an equitable effect on improving efficiency, the increase in efficiency in the use of said resources has had a regressive effect, mostly benefiting students of better performance. This refers mainly to the peer-effect, strongly associated with the segregated nature of the Chilean school system; v) unobserved factors have had a decisive impact on widening the inequality of PISA results, and vi) differences in the evaluation object and in the population assessed between PISA and SIMCE (Educational quality measuring system) are not sufficient factors to explain why the SIMCE test has shown no progress in national results in 10th-graders’ language, as one could have expected from the evidence provided by PISA.

We also inquired about the factors that explain the differences in the results obtained by Chilean students in PISA 2006 with respect to those obtained by students from Poland, Spain and Uruguay. The findings show that, in comparison with Spain and Uruguay, approximately one third of the gap in results (negative and positive, respectively) is explained by differences in the characteristics of students and establishments. The remaining two thirds of the gap with these countries, and the total gap with Poland, would result from lower efficiency of Chilean education. Overall, the results obtained suggest that in order to advance in furtherance of Chilean education, Chile must place renewed emphasis on the quality of the processes inside the classroom rather than on the management conditions of establishments (Bellei, et al., 2009a, 2009b).

Post-Secondary Education Policies

Regarding post-secondary education, the internal rate of return of different Chilean university careers has been studied. The rate of return and the net present value for several careers was calculated; the methodology involving the use of the work life cycle for professionals (forty years). The results indicate that there certainly are differences between university professions, the most profitable ones being Business Administration, Civil Engineering, Industrial Engineering and Medicine. Education and Architecture, on the other hand, are the least profitable. However, for all careers, including those just mentioned, there are clear incentives for studying and financing them. In addition, the results obtained suggest that students tend to choose a university career based on the net present value and not on the internal rate of return. This is due to the fact that the decision to pursue a university profession is, more often than not, a life-long decision (Lara, Meller and Valdés, 2010).

TEACHERS

Teachers and teaching quality are critical factors of the education system that help to explain students' school performance. More so, the effectiveness of educational policies and other educational inputs are very much linked to how teachers interpret and use them in their day-to-day interactions with students. This area examines factors that have an impact on teacher quality — teacher effectiveness, teacher education and the professional status and working conditions of teachers.

Teacher Effectiveness

Firstly, we studied how prospective teachers face a series of teaching situations in terms of their definition (substantive focus), reasoning and practical approach. To this end we analyzed the answers given by 1,400 future elementary education teachers to a survey concerning their teaching knowledge. The assumption was that their initial training had included the theoretical and practical knowledge needed to answer the questions asked.

The data analyzed led to the conclusion that the studied group of future teachers has little ability to articulate their pedagogical knowledge and provide answers that give evidence of substantive knowledge, pedagogical reasoning, and capability to suggest relevant educational activities with respect to the situations put forward. These future teachers reveal inadequate knowledge of key substantive areas such as social and cognitive development factors that affect learning; they have not developed essential criteria relating to what constitutes a good lesson planning; do not appreciate well the difference between the purposes of evaluation for teaching and evaluation as a tool to monitor learning; fail to recognize the value for learning of expecting students to answer questions in class; and have few practical suggestions to motivate students uninterested in the subjects taught. From an analysis of the training curriculum, this does not seem to be due to a lack of opportunity to learn the contents assessed. However, it can be inferred that the opportunity to recreate the theory in practice and vice versa might not be sufficiently present in the curriculum. These conclusions are tentative in so far as collecting information through surveys may not be the most appropriate way to measure practical knowledge or at least it is incomplete, since it does not include performance observation. In any case, the study provides material for training institutions to verify the quality of their teacher training courses and practical activities.

Secondly, we analyzed the vision of Chilean teachers about SIMCE as an indicator of their effectiveness and concluded that teachers do not understand the results of SIMCE as an indicator of their effectiveness, feeling unjustly blamed for the poor results obtained by the children in this test. Thus, they do not show commitment to the improvement of this indicator of the Chilean educational quality, viewing it as a target outside the teaching role. The results of this study are consistent with international evidence, which reports disagreement, demoralization and detachment of teachers with the policies implemented in the educational reforms that rely heavily on the use of standardized tests as a tool to monitor the quality of education (Pardo, 2010).

Thirdly, we also investigated the effect that observable characteristics of teachers have on students' performance in SIMCE of the 4th year of elementary education. The results indicate that in the language test, but not in mathematics, students educated by female teachers perform better in SIMCE than those educated by male teachers. Also, in both tests there is a correlation between school performance and the fact that the teacher has a

teaching degree, although the type of institution —university or normal school— where the title was obtained is relevant only in the language test. This effect is economically significant: students whose teachers have the respective degree get an additional score of up to 13% standard deviation. Finally, the effect of years of teaching experience is nonlinear, with the greatest gains in the early years of professional career, a result consistent with the research for other countries. Likewise, according to the results, the benefits of experience disappear after about 25 years into the career, a stage that gathers a significant percentage of Chilean teachers in the period under study (Lara, Mizala and Repetto, 2010).

Teacher Education

We analyzed the initial training of elementary education teachers in the area of language and communication through a representative sample of the curricula of 20 training institutions (traditional and private institutions, and institutes) and 84 language training programs. At the first stage of the study, we identified the temporal location of courses by the year in which they are given in the curriculum, and coded the purpose stated in each program. This led to a classification of six types of courses: i) Disciplinary language contents; ii) Strategies for language teaching; iii) Development of own language skills; iv) Disciplinary contents and development of language teaching strategies; v) Disciplinary content and development of own linguistic skills, and vi) Disciplinary contents, language teaching strategies and development of own linguistic skills. In the next stage of the study, we will analyze the internal consistency of language course programs and their relationship with the school curriculum.

In a first stage we conclude that the proportion of language courses (8.2%) in relation to all courses in training curricula for elementary education teachers suggests that training in this area could be insufficient considering that the time prescribed in the school curriculum for this subsector is approximately 20%. This could be related to the wide curricular range that the initial training of elementary education teachers must address, a situation that would force training centers to cover many areas in a superficial manner, in a relatively short training period. The purpose of most courses offered by universities is learning of disciplinary contents by future teachers. This trend seems to be consistent with the point raised by the literature reviewed in relation to the importance of strengthening disciplinary instruction during the initial teacher training. However, considering that these contents are taught concurrently with disciplinary teaching strategies and/or language skills, and that the curriculum includes a small number of courses for this purpose, one wonders about the depth with which such contents are addressed.

The number of courses that seek to develop language skills in future teachers draws one's attention, especially in combination with the teaching of contents and language teaching strategies. This would seem to be an emphasis inherent in teacher training in Chile, and could reveal the need to address weaknesses in language performance of graduate students from the secondary system who are admitted to elementary education teaching studies, and are, in most cases, the first generation to access post-secondary education. Finally, each type of training institution follows heterogeneous training models in the area of language in relation to the purposes of their courses and their temporary location.

Also related to initial teacher preparation, we analyzed, through document analysis of course syllabi and surveys of over 1100 pre-service teachers, the field-based preparation of ten elementary and 11 secondary pre-service programs. The studies yield three main

findings: (i) with the exception of one secondary program, field-based preparation starts early and involves a sequence of courses culminating in students teaching during the last semester; (ii) across all institutions, the focus of curricula is on teaching rather than on learning; and (iii) the version of the theory-practice relationship underpinning curricula assumes that the theoretical domain precedes the practical domain. These results suggest that adding more and earlier field-based courses might not result in more highly qualified teachers as the version of learning to teach depicted in the curricula has not changed (Contreras et al, 2010; Montecinos et al, 2010; Montecinos et al, 2009).

Moreover, we have examined the extent to which, and how, Chile's teacher evaluation and incentive policy as well as local district policies implemented in two urban districts, have transformed how teachers understand their work as well as their work identities. The main findings show that national policy and teachers promote a version of work identity that entailed intrinsic motivation, collective responsibility for results, and commitment to teaching processes that fostered the development of the whole student. Local policies, through which the national policy was translated, represented the core of teacher's work identity as responding to extrinsic motivation and as an individual responsibility for attaining prescribed results. These discrepancies raise questions about the effectiveness of national and local policies that send teachers opposing messages (Sisto et al, 2010a; Sisto et al 2010b).

Professional Status and Working Conditions of Teachers

In this area we analyzed the teachers' labor market. First, based on the results of a recent nationwide representative survey, we investigated how teachers interpret different dimensions of their professional status, and analyzed how these interpretations are linked to the teachers' characteristics and to the working conditions affected by market mechanisms that govern the Chilean educational system. The main results of the study reveal that most teachers perceive their profession as one of low status, a situation that has systematically worsened over time. This conclusion is similar in public schools, private voucher and private-pay schools. Despite this precarious situation, according to the vision of teachers, an increase in salaries, having additional time for professional activities, and better opportunities to advance in the teaching profession, are the most important factors that could improve the status of their profession (Bellei and Valenzuela, 2009).

As regards salaries, international evidence consistently recognizes that the issue of teachers' salaries, relative to those obtained in other professions, is critical in order to have quality teachers in the school system. So far several studies that analyze the salaries of Chilean teachers indicate that they receive an hourly wage similar to that of workers with similar characteristics, a conclusion that contradicts the results of other sources of information, such as *Futuro laboral*, which presents income data of teachers with up to 10 years in practice, from which it is concluded that teachers receive an average monthly income only half that earned by other professionals. The analysis using household surveys allows concluding that the differences with previous studies are explained by the definition of the comparison group, which should be made up of other professionals and not all workers in the country. Also, teachers are perceived to work fewer hours than other professionals and receive lower secondary earnings (Bellei and Valenzuela, 2010).

Elaborating on this issue, we compared, using household surveys, teachers' salaries with those of other professionals throughout the wage distribution, since average wages conceal relevant information when defining wage policies. Comparing teachers and non-

teachers with the same distribution of observable characteristics (i.e., education, experience, gender), we found a wage gap that favors teachers in the bottom of the wage distribution. However, for the rest of the wage distribution, teachers receive a lower salary than non-teachers with similar observable characteristics. On the other hand, when analyzing the behavior of wages over the years, we see that the wage gap in favor of non-teachers has been declining. In fact, in 1992 and 1996, teachers earned more than non-teachers with similar characteristics up to the 20th percentile of the wage distribution; in 2006; however, teachers earn more than non-teachers up to the 40th percentile of the wage distribution, and from this percentile up, the wage gap becomes negative for teachers. This means that teachers' salaries have improved in recent decades, especially for those teachers who are located in the bottom of the wage distribution, but teachers who are on the top of the wage distribution still earn less than individuals with comparable characteristics. (Mizala, Romaguera and Gallegos, 2010).

TEACHING & LEARNING

In contemporary society, the acquisition of basic mathematic, communication and scientific skills to understand and act in the world has become critical. This is reflected in the international concern to improve learning in these areas, understand the nature of their cognition and find effective teaching strategies in the classroom. In Chile, there is evidence that teachers feel insecure in the command of these disciplines and how to teach them, and that there are weaknesses in their training and deep knowledge thereof.

This area is focused on the classroom and the teaching-learning processes in four curricular disciplines: mathematics, language, social studies, and science. The research issues addressed concern: the quality of instruction and its relationship to learning outcomes; training of teachers; pupils and teachers' beliefs; specificity of knowledge that teachers must manage, their manifestations and evolution; the cognitive and didactic role of metaphors and representations; mathematical modeling of learning and mental representations of basic concepts, such as that of number.

Mathematics

One main issue in planned research work on the teaching and learning of mathematics concerns research on the cognitive and didactical role of metaphors, representations and visualization in mathematics.

In this direction, we have been able to verify with the help of experimental studies that the use of the "scales metaphor" has a significant impact on the learning of equation solving (Araya, Calfucura, Jiménez, Aguirre, Palavicino, Lacourly, Soto-Andrade, Dartnell, 2010). Indeed, the performance of below average students learning with this metaphor turned out to be equivalent to the performance of above average students learning with traditional (purely symbolic) methodologies. Moreover, we have made progress in figuring out which strategies children use when playing in one of the massive mathematical games developed by one of the work groups in math teaching and learning. We have been able to detect a positive correlation between a good performance playing this game and the use of strategies that reveal understanding of the mathematical topics involved (Araya, Bahamóndez, Jiménez, Calfucura, Dartnell, Soto-Andrade, Lacourly, 2010).

One of our hypotheses is that metaphors and representations available for numerical operations have a significant incidence on mental calculation proficiency in young children.

Consequently, we have undertaken the study of a variety of cognitive strategies, either idiosyncratic or learned, used by students in the first cycle of elementary education in Chile to practice mental calculation (Gálvez, Cosmelli, Cubillos, Leger, Mena, Tanter, Flores, Luci, Montoya, Soto-Andrade, 2010). We constructed a catalogue of observed strategies that appears to be surprisingly narrow, visualization strategies being conspicuously absent. We have recorded and analyzed the performance on additive mental calculation tasks (addition and subtraction) of a sample of students from state-subsidized schools in middle and lower-middle socioeconomic strata in the cities of Santiago and Valparaíso. We developed a first version of a software (available on the internet), aiming at diagnosing students' performance and use of strategies. A second version of this software, that is, *context sensitive*, currently under way, aims at enhancing and promoting specific mental calculation strategies among the students (Leger, Gálvez, Cosmelli, Cubillos, Flores, G. Luci, A. Mena, S. Montoya, J. Soto Andrade, Tanter, 2010). We got partial results concerning segmented correlations between performance in mental calculation and average school performance. We found Poisson-like distributions for global response times to our items, with superpositions of Poisson-like distributions for the case of specific tasks, that strongly suggest the use of “quick” as well as “slow” strategies.

Regarding the “poetic role of metaphors” (i.e., metaphors as a means to generate mathematical concepts besides solving concrete problems), we designed and successfully tested (with students as well as teachers) examples of didactical engineering applied to probabilistic and algebraic contents. Success was measured here by the concordance between our “a priori” analysis” and our “a posteriori” analysis”, according to the inner validation method of didactical engineering (Soto-Andrade, 2009).

We worked theoretically and experimentally on “theory networking” between the Japanese Lesson Study Method (JLSM), Didactical Engineering (DE), as originated in the French school of didactics of mathematics, the German Didactics of Mathematics School and the metaphoric approach in mathematics education (Cubillos, Mena, Soto-Andrade, 2010). We have identified convergences and divergences between these theories, like the equivalent operational use of “Grundvorstellungen” in the German school and “Conceptual Metaphors” in the metaphoric approach. Our preliminary findings suggest that our metaphoric approach may serve as an underlying (eventually implicit) common ground for the cognitive aspects of JLSM and DE.

With regard to the specific topic of learning of fractions, preliminary experimental studies (Mena, Gómez, Araya, Dartnell, 2010) have shown that there is a positive correlation between inhibitory skills (measured by a numerical Stroop test) of little children who are just beginning to learn fractions and their ability to carry out simple comparisons among them.

In terms of the research on the pre-service and in-service teachers' knowledge for teaching elementary school mathematics (Lacourly and Varas, 2009), we have developed new assessment instruments, and have had standard international ones translated into Spanish (from University of Michigan's LMT: “Learning Mathematics to Teach” Project) which have been validated empirically. The main contribution is a test that was able to measure reliably the component “Knowledge of Students and Mathematics” of the Pedagogical Content Knowledge, that LMT was unable to measure. We were able to separate this component from what LMT measured, although at the expert level (more knowledgeable teachers) both components were harder to distinguish (which coincides with the German COACTIV project findings in high school teacher knowledge research).

Science

CIAE researchers have also studied the relationship between students' conceptions of science and their scientific competence. First, a descriptive study of high school students' conceptions of scientists, of the nature of science and of learning science through a mixed-method sequential approach was carried out. A quantitative instrument was presented to approximately 1,200 students enrolled in different types of schools. From these analyses we learned that, as elsewhere in the world, students view scientists in a very traditional manner: as an elderly male in white lab robes doing chemical experiments. Alternative visions, such as female/younger scientists working outside the science lab, were scarce. The qualitative data shows that students' conceptions of science assume science as objective, natural and empirical. Since these elements are interconnected, and assume a positivist framework, the thesis is that students have implicit theories of science and of scientists, and that these implicit theories relate to different sources. Currently researchers are working on this topic through a qualitative approach (Gonzalez et al., 2009a).

With respect to the relationship between conceptions of science and scientific competence, a quantitative instrument is in the process of validation aimed at assessing high school students' scientific competence. This instrument is based on the PISA evaluation in that it measures knowledge, skills and attitudes towards science. The preliminary results show that a) students from public municipal schools perform significantly worse on this instrument, specifically on scientific knowledge and skills, than students from private schools —this result is similar to the 2006 PISA results in Chile—; and b) students with a more constructivist conceptions of science —that is, the view that science is a social activity; that personal beliefs and social values influence science— show a more positive attitude towards science, and tend to attempt applying the scientific contents learned at school to their everyday lives (Gonzalez et al., 2009b).

However, and almost independently of their conceptions about scientists and scientific activities, as well as about their type of school, the students in the sample reported that they learned science in a very reproductive manner: strategies such as memorizing were much more frequent than more generative strategies such as re-elaborating through conceptual maps, seeking further information, etc. These results show that students are not learning science through scientific inquiry approaches, but rather through associations, product-based approaches. What is surprising is that these strategies are preferred by most students, whatever their view of the nature of science. This might have to do with how science is taught, and how science is assessed, in the regular classroom; that is, that the conceptions of science are not the same as the conceptions of school science (Gonzalez et al., 2009b).

Social Science

In 1999, more than five million eighth graders participated in an international test on Civic Education designed to evaluate their civil knowledge, skills and attitudes, and the results for Chile were unsatisfactory. This led to investigate the state of civic knowledge ten years after the application of said test. The results of the investigation enable to verify that curricular innovation is not sufficient to ensure by itself more and better citizen learning. At the end of the second cycle of elementary school, students do not have clarity about the political role of the State and its institutions, and have great distrust in political parties, which they see as away from society and even more distant from themselves. Hence, although they are aware of their rights and the importance of recognizing the rights of

others, they seem reluctant to engage in any political activities, and even more so to participate in a political party (Muñoz et al., 2010).

Curriculum

Meanwhile, we analyzed inside classrooms of highly vulnerable schools the relationship between the curriculum, the cultural codes that it represents, the culture and pedagogical approach of teachers (planning work and teaching strategies) and children's culture. In most cases we observe a teacher who is far from acting according to the cultural codes of the official curriculum and learning strategies that are proposed therein. Even more, we see a teacher who may be closer to the children's culture and cultural codes than those encouraged by the school through the official curriculum, without any sign of antagonism between two different cultures at play in the school arena. This does not ignore the fact that there are teachers who, given their work attached to the official curriculum and cultural codes, can generate antagonistic learning relationships that lead to children failing at school (Castro and Días, 2010).

In terms of curriculum development in these vulnerable schools, it was noted that a significant portion of school time is devoted to activities not leading to specific learning, without providing room for creative participation. The poor handling of the official educational curriculum and official didactics makes it difficult to perform a didactic transposition with relevance to children's culture; teachers have difficulty in identifying relevant learning and there is low utilization of resources and materials provided by the Ministry of Education, such as textbooks in various subsectors of the curriculum, libraries and ICT in the classroom, computer labs (Castro et al., 2010).

COGNITIVE SCIENCES & NEUROSCIENCE APPLIED TO EDUCATION

This area studies the neural and cognitive basis of learning under different conditions relevant to education, with the purpose of adding scientific evidence to the current neuro-cognitive models of learning. It explores how humans learn upon the basis of an integrated analysis of behavior, brain activity, cognitive risk and socio-cultural environment.

The work is organized around two areas of activities. The first one focuses on an experimental research program, whereas the other carries out varied kinds of research aimed at informing early childhood education policies. The experimental research program entails four lines of investigation: i) early learning, development and plasticity; 2) learning and nutrition; iii) learning, sleep-wake cycle and chronobiology, and iv) learning and executive function. The second strand focuses on the design of an instrument for the assessment of the development of children aged 0-6 years old.

This area involves the creation of a Cognitive Neuroscience Laboratory implemented with modern technologies allowing researchers the simultaneous evaluation and integrated analysis of brain activity, behavior and neuro-physiological patterns displayed during successful and failed learning.

Progress has been made in characterizing the cognitive and neural bases of early learning in populations of healthy children and children at cognitive risk. In the early learning and development line of research, we have shown that premature babies do not advance their learning of their mother tongue (Peña et al., 2010a, 2010b) and we are exploring the

development of symbolic thought in healthy infants and in those born deaf (Peña, submitted). In the line of sleeping habits, nutrition and learning, we have begun the implementation of a Laboratory to evaluate the effects of napping on school learning (Vivaldi, 2010). In the line of executive functions, we have implemented an assessment task for executive attention of healthy adults and schizophrenic patients to be used as the benchmark for tests applied in schools at different times of the day (Orellana, Peña & Slachevsky, submitted). We have also added a new line of research that assesses the molecular mechanisms of learning problems. In this line we have made progress in exploring the molecular patterns that correlate with learning problems seen in Alzheimer's disease in rats (Parodi, Aguayo et al., 2010; Sepúlveda Aguayo et al., in press). Finally, progress has been made in the implementation of the Cognitive Neuroscience Laboratory, which will serve as the basis of several studies involving the preschool and school population.

In relation to the instrument for assessing the development of children aged 0-6 years, we have built a preliminary database of 3,000 items to evaluate the cognitive, motor, language, and socio-emotional development of children 0-6 years of age. These items have been submitted to the opinion of national and international experts and are currently in a pilot phase to study their applicability.

LEARNING, COGNITION, INFORMATION TECHNOLOGIES, AND THE BRAIN

This area examines the links between technology, education and learning; its purpose is to design, develop and validate models for the use of technology in the classroom; and research the relationship modes that groups with specific disadvantages form with the technology. To achieve this, we have proposed to develop studies about the context in which technology is adopted, examine the impact and results of using information and communication technology (ICT), for learning and the development of the intellect. Of particular interest is the impact of classroom environments on learning conditions, (e.g., motivation, pedagogical practices in the classroom, ICT resources); teacher improvements, (results in terms of teaching reactions, improvement in discipline and the teachers' methods, management and school leadership); their impact on the development of high level skills among students (critical and creative thinking, problem solving, communication, teamwork); and how curriculum content is handled. The main research areas are: the impact of an interactive virtual environment for learning and cognition; videogames for learning and the development of skills at the school; models of the integration of ICT in the curriculum; mental plasticity and the interaction of digital technology on the sighted and the unsighted.

Relationship of Groups with Specific Disabilities with Technology.

We developed a study on "Mobility and Orientation through Learner Video Games, MOVA", with the participation of 19 blind children from schools of the Santiago, Valparaíso and Concepción regions, aged 6 to 12 years. We first assessed the usability of a haptic device (Digital Clock Carpet), in conjunction with an audio-based videogame (MOVA3D), both developed by our team, in order to determine the degree of satisfaction with and acceptance of the products.

Subsequently, we conducted a cognitive assessment using both products to determine their impact on mobility and orientation of blind students in unfamiliar indoor spaces. The results showed that the blind children can use and enjoy the haptic device and the 3D

videogame developed. Also, after use thereof children showed a significant increase in temporo-spatial skills when navigating in unfamiliar surroundings, enhancing their development of orientation and mobility skills.

Participants were able to integrate new learning about the skills involved in the investigation, primarily those associated with the ability to take positions according to their own needs for executing actions with the digital clock carpet; situate in space from an initial position; integrate the clock technique by associating the body position with a particular time, processing this information and transforming it into an executable movement in the haptic device. In this manner they generated movement within the virtual scenario, enhancing the conceptualization and construction of a mental map of the space navigated in the videogame, which ultimately allowed them to make a transfer of everything learned to a real environment.

The MOVA3D videogame and the Digital Clock Carpet emerge as powerful tools for audio-based stimulation of temporo-spatial skills in blind children, as demonstrated in their ability to transfer learning from the virtual to the real world (Sánchez et al., 2010a).

In a second stage of this line of research, and to respond to new questions arisen, we have recently launched a study on “Navigation of Blind Learners through Videogames, NACVI.” The purpose of this investigation is to implement an intervention design to improve the development of orientation and mobility skills of blind school-age children, using the MOVA3D Videogame and the Digital Clock Carpet haptic device, initially developed in the MOVA project. For this new stage, we have redesigned and improved the videogame in line with the results obtained in the first stage. The hypothesis is that systematic use of the MOVA3D videogame supports the development of orientation and mobility skills, which can be then transferred to day-to-day life situations by navigating through real spaces unfamiliar to blind children.

Technology use in the classroom

We have developed a qualitative study on “Integration of ICTs, and Learning and Teaching Styles”, raising the debate on the current generation of students and their relationship with ICTs, as well as analyzing and discussing the assumptions concerning the emergence of a new generation of students: digital natives, characterized by broad access to digital media and by having new skills and abilities. This qualitative stage of the study involved the participation of teachers of science, arts, language, technical and professional education, mathematics and music, along with students of elementary and secondary education, aged between 13 and 18, from urban schools in Santiago, Valparaíso, Viña del Mar, and Iquique. The investigation presented two working hypotheses: (i) the experience with ICTs is distributed socially, so that the traits of a generation of digital natives would be inherent in specific social groups, where this digital experience is distinctive, (ii) for groups with more sophisticated applications, practices associated with ICTs do not imply the development of new skills and competencies, different and distinctive from those found in previous generations.

Regarding the first hypothesis, the study showed that students share the feature of widespread presence of ICTs and other media in their everyday experiences, but use them differently and to varying degrees, forming rather specific groups, user types with usage patterns and significance of ICTs instead of a generation with common marks associated with the use of ICTs. Concerning the second hypothesis, the recounts by the subjects

studied did not provide clear evidence that current students develop competencies or skills that are distinctive. We found that they use multiple media and computer windows open simultaneously, but we cannot conclude that they are multitasking or have special capabilities for parallel processing of information, as stated by Pedró (2006) and Prensky (2001). What we found in cases of more intensive use of ICTs is a management practice of more sophisticated attention (Sánchez et al., 2010, b).

In summary, through the investigation we found no clear evidence showing that today's learners develop very distinctive competencies relative to their counterparts in previous generations. Rather than multitasking, students seem to manage their attention in an acute manner. In the students' recounts there is evidence of a distance and conflict between school and students' extracurricular experience, and their interests in the field of ICTs and traditional media.

These findings paved the way for new questions that arose in a new study on "Digital Natives and Actual Learners. Contrasting Theory with Reality", conducted this year. Some conclusions of the previous study relate to recognition of the similarities and differences that these natives have in Chile in relation to their international peers and highlight socialization and communication through ICTs as a significant feature. While these "digital natives" develop deep learning and technological applications, the schooling institution disregards and not always welcomes them.

All the foregoing led us to redefine the concept of digital natives, describing them as new learners, who organize, relate and construct their social and school relationships in a very different way from young people from other times, but with very dissimilar characteristics according to gender, age and socioeconomic status, among other factors.

REFERENCES

Aguayo, L. (with Parodi, J.; Sepúlveda, F.; Roa, J.; Opazo, C. and Inestroza N.) (2010) "B-Amyloid Causes depletion of Synaptic vesicles leading to Neurotransmission failure." *The Journal of Biological Chemistry*. Vol. 285, Nº4, pp. 2506-2514.

Aguayo, Luis (with Sepúlveda, F.; Parodi, J.; Peoples, R. and Opazo, C.) "Synaptotoxicity of Alzheimer Beta Amyloid Can Be Explained by Its Membrane Perforating Property" *PLoS ONE* ISI 5(7): e11820. doi:10.1371/journal.pone.0011820 (2010)

Ahumada, L.; Sisto, V.; López, V. and Valenzuela, J.P. (2010) "Liderazgo distribuido durante el proceso de elaboración e implementación de planes de mejoramiento educativo en una Comuna Rural en Chile. Paper submitted to *Revista de Ciencias Sociales* (ISI).

Avalos, B.; Pardo, M.; Alegría, M. and Cisternas, T. (2010) "El conocimiento pedagógico de futuros profesores", manuscript.

Araya, R.; Calfucura, P.; Jiménez, A.; Aguirre, C.; Palavicino, M. A.; Lacourly, N.; Soto-Andrade, J. and Dartnell, P. (2010) "Analogies Effect in Learning to Solve Algebraic Equations", *Pedagogies: An International Journal*, Volume 5, Issue 3.

Araya, R.; Bahamondez, M.; Jiménez, A.; Calfucura, P.; Dartnell, P.; Soto-Andrade, J. and Lacourly, N. (2010), "Estimación de Estrategias de Juego de Estudiantes en Torneo Masivo de Estadística." MATECOMPU 2009 "La Enseñanza de la Matemática y la Computación", Universidad de Ciencias Pedagógicas "Juan Marinello", Matanzas, Cuba.

Bellei, C. and Valenzuela, J.P. (with Alejandro Sevilla and Alejandra Osses) (2009a) "¿Qué explica las diferencias de resultados PISA Matemática entre Chile y algunos países de la OCDE y América Latina?" in "¿Qué nos dice PISA sobre la educación de los jóvenes en Chile?", pp.105-148, OEI and Ministry of Education of Chile, Santiago, Chile. (Also an English version in "What does PISA tell us about the education of high school students in Chile?").

Bellei, C. and Valenzuela, J. P. (with Alejandro Sevilla and Alejandra Osses) (2009b) "¿Qué explica las diferencias de resultados PISA Lenguaje entre Chile y algunos países de la OCDE y América Latina?" in "¿Qué nos dice PISA sobre la educación de los jóvenes en Chile?", pp.149-170, OEI and Ministry of Education of Chile, Santiago, Chile. (Also an English version in "What does PISA tell us about the education of high school students in Chile?").

Bellei, C. and Valenzuela, J.P. (2009) "Condiciones de trabajo y estatus de los profesores en un sistema educacional orientado por el mercado. El caso de Chile", manuscript.

Bellei, C.; Valenzuela, J.P.; Sevilla, A. and De Los Rios, D. (2010) "Remuneraciones de los docentes en Chile: Resolviendo una aparente paradoja" Technical Note CIAE.

Benedetti, C. and Mizala, A. (2010) "Análisis y evaluación de la gestión municipal en educación", manuscript.

Castro, A. and Días, A. (2010) "Dialéctica de los aprendizajes y ruptura del círculo de los bajos aprendizajes en sectores de alta vulnerabilidad", manuscript.

Castro, A.; Figueroa, B.; Quevedo, C. and Maldonado, C. (2010) "Hallazgos en desarrollo curricular", manuscript.

Contreras, I.; Rittershausen, S.; Montecinos, C.; Solis M. C.; Núñez, C. and Walker, H. (2010). "Los centros educativos como espacios para aprender a enseñar: visiones desde los programas de formación de profesores de educación media." Revista Estudios Pedagógicos (Accepted)

Cubillos, L.; A. Mena, J. and Soto-Andrade, J. (2010), "Connecting different theoretical approaches in mathematics education: Ingénierie Didactique, Japanese Lesson Study and the Metaphoric Approach", Research Announcement, manuscript.

Gálvez, G.; Cosmelli, D.; Cubillos, L.; Leger, P.; Mena, A.; Tanter, É.; Flores, X.; Luci, G.; Montoya, S. and Soto-Andrade, J. (2010), "Estrategias cognitivas para el cálculo mental", submitted to RELIME (Revista Latinoamericana de Investigación en Matemática Educativa, ISI), Mexico.

González, C.; López, V.; Bravo, P. and Castillo, P. (2009a) "Científicos jóvenes y sonrientes: la imagen de científico de los estudiantes chilenos de 11° y 12° grado en

diferentes contextos escolares". Enseñanza de las Ciencias. Extra Issue, 8th International Conference on Research in Didactics of the Sciences; 2548-2552 (ISI).

González, C.; López, V.; Bravo, P and Martínez, M. (2009b) "¿Qué está haciendo el científico?: análisis de la actividad científica descrita por alumnos secundarios chilenos de 11° y 12° grado de distintos tipos de establecimientos educacionales". Enseñanza de las Ciencias. Extra Issue, 8th International Conference on Research in Didactics of the Sciences; 2955-2959 (ISI).

Lacourly, N. and Varas, M. L. (2009), "Evaluación de diversas componentes del conocimiento matemático necesario para enseñar matemáticas en Enseñanza Básica". CIAE Working paper.

Lara, B.; Mizala, A. and Repetto, A. (2010) "Una Mirada a la Efectividad de los Profesores en Chile" manuscript.

Lara, B.; Mizala, A. and Repetto, A. (2009) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Occasional Paper No. 180, National Center for the Study of Privatization in Education, Teachers College, Columbia University.

Lara, B.; Meller, P. and Valdés, G. (2010) "Net Present Value and Internal Rate of Return of Different Chilean University Careers" manuscript.

Leger, P.; Gálvez, G.; Cosmelli, D.; Cubillos, L.; Flores, X.; Luci, G.; Mena, A.; Montoya, S.; Soto Andrade, J. and Tanter, E. (2010), "Hacia el uso de Sistemas Adaptables al Contexto para Promover Estrategias de Cálculo Mental", Research Announcement, manuscript.

Mena, G.; Gómez, D.M.; Araya, R. and Dartnell, P. (2010), "Do you want to excel in fractions? Inhibit!", manuscript.

Mizala, A.; P. Romaguera and S. Gallegos (2010) "The Teachers Wage Gap in Chile, 1992-2006", manuscript.

Mizala, A. and Schneider, B. (2010) "The Political Economy of Regulating Private Provision of Education in Chile", manuscript.

Montecinos, C.; Walker, H.; Rittershaussen, S.; Contreras, I.; Nuñez, C. and Solís, M. C. (2010) "Defining learning goals for field-based coursework: Contrasting the perspectives of secondary preservice teachers and their teacher preparation curricula". Paper accepted with revisions Teaching and Teacher Education.

Montecinos, C.; Walker, H.; Rittershaussen, S.; Contreras, I.; Nuñez, C. J. and Solís, M.C. (2009), "Preservice Teachers' Beliefs on Learning to Teach". Paper presented at the Annual Meeting of the American Educational Research Association. San Diego, U.S.A.

Muñoz, C.; Vásquez, N. and Reyes, L. (2010) "Percepción del estudiantado de enseñanza básica sobre el rol del Estado y las instituciones públicas", manuscript.

Pardo, M. (2010) "La visión de los profesores chilenos sobre el SIMCE como indicador de su eficacia", manuscript.

Peña M, Pittaluga E, Mehler J. (2010a) "Language acquisition in premature and full-term infants. Proceedings of the National Academy of Sciences". 107(8):3823-8 (ISI)

Peña M, Pittaluga E, Farkas C. (2010b) "Phonological acquisition in preterm infants". Revista de Neurología. 50(1):12-8.

Peña M. "Desarrollo del pensamiento simbólico en niños pequeños." Submitted to Revista de Neurología.

Sánchez, J.; Sáenz, M.; Ripoll, M. and Garrido, J. (2010a) "Usability of a Multimodal Videogame to Improve Navigation Skills for Blind Children. ACM Transactions on Accesible Computing, TACCESS" (accepted).

Sánchez, J.; Salinas, A.; Contreras, D. and Meyer, E. (2010b) "Does the New Digital Generation of Learners Exist? A Qualitative Study". British Journal of Educational Technology (accepted) (ISI).

Sisto, V.; Fardella, C; Ahumada, L. and Montecinos, C. (2010a) "Análisis de la implementación a Nivel Local de la Política de Evaluación e Incentivos al Desempeño Docente". Paper submitted to Universitas Psychologica.

Sisto, V.; Montecinos, C.; Ahumada, L. and Fardella, C. (2010b) "Identidades en Disputa: las Identidades Laborales de los Profesores en el Contexto de las Políticas Laborales Managerialistas en el Chile Actual. Paper submitted to Revista Internacional de Sociología.

Soto-Andrade, J. (2009), "Ingénierie didactique ou bricolage?", Communication, to appear in Actes de la XVe École d'Été de l'ARDM (Association française pour la recherche en didactique des mathématiques), Clermont-Ferrand, France, 5 p.

Vivaldi E. (2010) "Sueño, memoria y aprendizaje". Manuscript.

VI. OUTPUTS

1. PUBLICATIONS

a) International journals

1. **Aguayo, Luis** (with Parodi, J.; Sepúlveda, F.; Roa, J.; Opazo, C. and Inestroza, N.), "b-Amyloid Causes depletion of Synaptic vesicles leading to Neurotransmission failure." *The Journal of Biological Chemistry*. **ISI** Vol. 285, N°4, pp. 2506-2514 (2010)
2. **Aguayo, Luis** (with Sepúlveda, F.; Parodi, J.; Peoples, R. and Opazo, C.) "Synaptotoxicity of Alzheimer Beta Amyloid Can Be Explained by Its Membrane Perforating Property" *PLoS ONE* **ISI** 5(7): e11820. doi:10.1371/journal.pone.0011820 (2010)
3. **Araya, Roberto; Lacourly, Nancy; Soto-Andrade, Jorge; Dartnell, Pablo** (with Calfucura, P.; Jiménez, A.; Aguirre, C., Palavicino, M. A). "The effect of analogies on learning to solve algebraic equations". *Pedagogies: An International Journal*. Volume 5 Issue 3 (2010).
4. **Bellei, Cristián** "Does lengthening the school day increase students' academic achievement? Results from a natural experiment in Chile" *Economics of Education Review* **ISI** 22(5), 629-640. October, 2009
5. **González, Pablo** (with Velásquez, J.) "Expanding the Possibilities of Deliberation: The Use of Data Mining for Strengthening Democracy with an Application to Education Reform" *The Information Society* **ISI** 26(1), 2010.
6. **López, Verónica** (with Sotillo, M.) "Giftedness and social adjustment: Evidence supporting the resilience approach in Spanish-speaking children and Adolescents". *High Ability Studies*, 20, 39-53. **ISI** (2009).
7. **Montecinos, Carmen; Sisto, Vicente; Ahumada, Luis**. "The construction of parents and teachers as agents for the improvement of municipal schools in Chile". *Comparative Education* **ISI**. (accepted).
8. **Peña, M.; Pittaluga, E. and Mehler, J.** "Language acquisition in premature and full-term infants." *Proceedings of the National Academy of Sciences* **ISI**. 107(8):3823-8. (2010)
9. **Peña, M.** (with Pittaluga, E. and Farkas C.) "Phonological acquisition in preterm infants." *Revista de Neurología* **ISI** 50(1):12-8. (2010)
10. **Salinas, A. and Sánchez, J.** "Digital Inclusion in Chile: Internet in Rural Schools." *International Journal of Educational Development* **ISI**, 29(6), pp. 573-582 (2009)
11. **Sánchez, J. and Salinas, A.** (with Harris, J.) "Education with ICT in South Korea and Chile: A Comparative Approach." *International Journal of Educational Development* **ISI** (accepted, in press) (2010)

12. **Sánchez, J. and Meyer, E.** (with Salinas, A., Contreras, D.) "Does the New Digital Generation of Learners Exist? A Qualitative Study." *British Journal of Educational Technology* ISI (accepted, in press) (2010)
13. **Sánchez, J and Sáenz, M.** "Metro Navigation for the Blind." *Computers & Education* ISI (accepted, in press. Published online at: <http://dx.doi.org/10.1016/j.compedu.2010.04.008>) (2010)
14. **Sánchez, J.; Sáenz, M.; Ripoll, M. and Garrido, J.** "Usability of a Multimodal Videogame to Improve Navigation Skills for Blind Children." *ACM Transactions on Accesible Computing, TACCESS* (accepted, in press) (2010)

b) Conference Proceedings with peer review

1. **Araya, Roberto, Pablo Dartnell, Jorge Soto-Andrade, Nancy Lacourly** (with Bahamondez, M., Jiménez, A. and Calfucura, P.) "Estimación de Estrategias de Juego de Estudiantes en Torneo Masivo de Estadística." XI Evento Internacional MATECOMPU 2009
2. **González, Corina, López, Verónica** (with Bravo, P. and Castillo, P). "Científicos jóvenes y sonrientes: la imagen de científico de los estudiantes chilenos de 11° y 12° grado en diferentes contextos escolares." *Enseñanza de las Ciencias*. Número Extra VIII Congreso Internacional sobre Investigación en Didáctica de las Ciencias; 2548-2552 (ISI) (2009).
3. **González, Corina, López, Verónica** (with Bravo, P and Martínez, M). "¿Qué está haciendo el científico?: análisis de la actividad científica descrita por alumnos secundarios chilenos de 11° y 12° grado de distintos tipos de establecimientos educacionales". *Enseñanza de las Ciencias*. Número Extra VIII Congreso Internacional sobre Investigación en Didáctica de las Ciencias; 2955-2959 (ISI) (2009).
4. **Sáenz, Mauricio; Sánchez, Jaime.** "Indoor Orientation and Mobility for Learners Who are Blind". 15th Annual Cybertherapy & CyberPsychology Conference, CyberTherapy 2010, Seoul, Korea, June 13-15, 2010 (accepted, in press) (2010)
5. **Sánchez, Jaime; Sáenz, Mauricio.** "Innovative Practices for Learning Human-Computer Interaction by Engineering Learners". 1st Annual Engineering Education Conference, IEEE EDUCON, Madrid, España, April 14-16, 2010, pp. 1-6 (2010).
6. **Sánchez, Jaime; Sáenz, Mauricio** (with Pascual-Leone, A., Merabet, L.) "Navigation for the Blind through Audio-Based Virtual Environments". ACM CHI 2010 We are HCI, Atlanta, GA, USA, 10-15 April 2010, pp. 3409-3414. (2010).
7. **Sánchez, Jaime; Sáenz, Mauricio.**, (with Pascual-Leone, A., Merabet, L.) "Enhancing Navigation Skills through Audio Gaming". ACM CHI 2010 We are HCI, Atlanta, GA, USA, 10-15 April 2010, pp. 3991-3996. (2010).
8. **Sánchez, Jaime; Sáenz, Mauricio; Ripoll, Miguel.** "Usability of a Multimodal Videogame to Improve Navigation Skills for Blind Children". *Proceedings of the*

Eleventh International ACM SIGACCESS Conference on Computers and Accessibility, Pittsburgh, PA, USA, October 26-28, 2009, pp. 35-42. (2009).

9. **Sánchez, Jaime; Sáenz, Mauricio.** "Video Gaming for Blind Learners School Integration in Science Classes". In T. Gross et al. (Eds.): INTERACT 2009, Part I, LNCS 5726, pp. 36–49, 2009. © IFIP International Federation for Information Processing 2009. (2009)
10. **Soto-Andrade, J.**, "Ingénierie didactique ou bricolage?" Communication, por aparecer en Actes de la XVe École d'Été de l'ARDM (Association française pour la recherche en didactique des mathématiques), Clermont-Ferrand, France, July 2009.

c) Papers submitted to international journals

1. **Contreras, Dante** (with P. Sepúlveda and S. Cabrera) "The effects of lengthening the school day on female labor supply: Evidence from a quasi-experiment in Chile" Submitted to Journal of Labor Economics **ISI**.
2. **Dartnell, Pablo** (with Gómez, D.). "Almost sure convergence of some empirical distributions to Bernoulli convolutions". Submitted to Statistics & Probability Letters **ISI**.
3. G. Gálvez, D. Cosmelli, **L. Cubillos**, P. Leger, A. Mena, **É. Tanter**, X. Flores, G. Luci, S. Montoya, **J. Soto Andrade**, "Estrategias cognitivas para el cálculo mental", Submitted to *RELIME (Revista Latinoamericana de Investigación en Matemática Educativa)*, México, 2010 **ISI**.
4. **Makovec, Mattia, Mizala, Alejandra** (with Andrés Barrera) "Parental decisions in a choice based school system: Analyzing the transition between primary and secondary school", 2010. Submitted to Economics of Education Review **ISI**.
5. **Mizala Alejandra** (with Bernardo Lara and Andrea Repetto) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". 2009. R&R Educational Evaluation and Policy Analysis **ISI**.
6. **Mizala, Alejandra** (with Francisco Henríquez, Bernardo Lara and Andrea Repetto) "Effective Schools do Exist: Low Income Children's Academic Performance in Chile. 2009." Submitted to Applied Economics **ISI** (UK).
7. **Muñoz L., Carlos** (with Vásquez, N.; Jedlicki, L.) "Students in the face of the role of the State, democracy and citizenship." Submitted to Asia Pacific Journal of Education **ISI**
8. Orellana G, **Peña M, Slachevsky A.** "Specific executive attention impairment in first episode schizophrenia." Submitted to Schizophrenia Resesarch **ISI**.
9. **Peña M.** (with Hoffmann Bion R, Nespor M.) "How modality specific is the iambic-trochaic law? Evidence from Vision." Submitted to Journal of Experimental Psychology: Learning, Memory and Cognition **ISI**.

10. **Peña M.** (with Melloni L.) "Brain oscillations during spoken sentence processing." Submitted to NeuroImage **ISI**
11. **Peña M.** "Desarrollo del pensamiento simbólico en niños pequeños." Submitted to Revista de Neurología **ISI**.

d) Journals of National Circulation

1. **Ahumada, Luis.** "Liderazgo Distribuido y Aprendizaje Organizacional: tensiones y contradicciones de la actual Reforma Educacional". *Psicoperspectivas*. Revista de Psicología de la Escuela de Psicología de la Pontificia Universidad Católica de Valparaíso, 9(1), 111-123. (Latindex Catalogo) (2010)
2. **Ávalos, Beatrice; Cavada, Paula; Pardo, Marcela; Sotomayor, Carmen.** "La Profesión Docente: Temas y discusiones en la literatura internacional". En Revista Estudios Pedagógicos (Universidad Austral de Chile). (Scielo) (forthcoming)
3. **Cáceres, Carlos.** "Financiamiento, Institucionalidad y Gestión en las Universidades Chilenas: Desafíos y Propuestas". Revista Estudios Sociales. Corporación de Promoción Universitaria, N°118. en prensa. (2010)
4. **Donoso, Sebastián** (with Moyra Castro, Giselle Davis and Víctor Cancino) "¿Qué Hacer con los Sistemas de Educación Pública Subnacional en Chile?" Revista Chilena de Estudios Regionales. Año 1, N° 2, Pp. 147 -155. (2009)
5. **Donoso, Sebastián** (with Carolina Órdenes) "El Capital Humano y el desarrollo de la Región del Maule". Panorama Socioeconómico, Año 9, N° 38, Pp. 8 -16. (2009)
6. **Donoso, Sebastián** "Economía política del financiamiento de los estudios universitarios en Chile: (1980-2010): Debate de sus fundamentos". Revista Innovar, Número especial de Educación (editor Sebastián Donoso). pp.141 -188. (ISI) (2009)
7. **Donoso, Sebastián** (with Gonzalo Donoso) "Políticas de Gestión de la Educación Pública Escolar en Chile (1990 -2010): Una evaluación inicial". Ensayo. N° 64. Vol. 17, Pp. 412 -448. (Indexada Scielo) (2009)
8. **López, Verónica** (with Morales, M.; Ayala, A.) "Maltrato entre pares: Conductas de intimidación y victimización en escolares chilenos". Revista de Psicología, 27(2), 243-286. Revista indexada en Latindex Catálogo, PsycInfo, Redalyc. (2009)
9. **López, Verónica; González, Corina** (with Bravo, P. and Martínez, M.) "¿Qué está haciendo el científico?: Análisis de la actividad científica descrita por alumnos secundarios chilenos de 11° y 12° grado de distintos tipos de establecimientos educacionales". Enseñanza de las Ciencias, VIII, pp.2955-2959. Estado: publicado. Revista indexada en ISI. (2009).
10. **Sánchez, J.** Aprendizaje de las Matemáticas con Software Basado en Audio en Niños con Discapacidad Visual. Revista Jakingariak, País Vasco, España, número 66, 2009. pp. 40-49

11. **Sánchez, Jaime; Sáenz, Mauricio.** "Orientación y Movilidad en Espacios Exteriores para Aprendices Ciegos con el Uso de Dispositivos Móviles". Revista Anales de la Universidad Metropolitana, Venezuela, 8(2), pp. 47- 66 (2008).
12. **Sánchez, Jaime; Sáenz, Mauricio** (with Salinas, A.) "Videojuegos Móviles para Aprender y Pensar en Ciencias", Revista Anales de la Universidad Metropolitana, Caracas, Venezuela, 9(1), pp. 67-86 (2009).
13. **Sánchez, Jaime; Sáenz, Mauricio.** "Enseñar y Aprender HCI, Amalgama perfecta entre Teoría y Praxis". Revista BITS de Ciencia, N° 3, pp. 39-43 (2009)
14. **Valenzuela, Juan Pablo.** "La Descentralización Fiscal de los Gobiernos Locales Chilenos I Parte", en Revista Hacienda Municipal, 108, págs.122-132, México. (2010)
15. **Valenzuela, Juan Pablo.** "La Descentralización Fiscal de los Gobiernos Locales Chilenos II Parte", en Revista Hacienda Municipal, 109, págs.80-90, México. (2010)

e) Books and books edited

1. **Bellei Cristián** (editor). *Asistencia Educativa en Chile: ¿Aporte al mejoramiento Escolar?* Santiago: Editorial OchoLibros. (2010)
2. **Bellei, Cristián, Valenzuela Juan Pablo** (with Daniel Contreras) (editores) *Ecos de la revolución pingüina*. Editorial Pehuén (en prensa).
3. **Donoso, Sebastián,** Schmal R. Introducción a la Economía de la Educación: *El fenómeno educativo y su connotación económica*. Editorial Universidad de Talca, Talca, Chile. (2009).

f) Editor International Conferencess Proceedings

1. **Jaime Sánchez I.** (editor). "Nuevas Ideas en Informática Educativa", Actas Taller Internacional de Software Educativo, TISE '09. Centro de Computación y Comunicación para la Construcción del Conocimiento, C5, Universidad de Chile: Santiago, Diciembre 2009
2. Paul Sharkey, **Jaime Sánchez** (editors). "Proceedings The 8th International Conference on Disability, Virtual Reality and Associated Technologies", The University of Reading, August 30 – September 2, 2010

g) Books chapters

1. **Bellei, Cristián.** Evolución de las políticas educacionales en Chile: 1980-2009. (2010). In *El libro abierto de la informática educativa* (A. Bilbao and A. Salinas, editores), Ministerio de Educación.
2. **Bellei, Cristián** ¿Qué hemos aprendido sobre programas de asistencia técnica educativa? In: Cristián Bellei (coord.). *Asistencia Educativa en Chile: ¿Aporte al*

- mejoramiento Escolar?* Santiago: Editorial Ocho libros (with Dagmar Raczynski and Alejandra Osses).
3. **Bellei, Cristián** Programa Mejor Escuela. In: Cristián Bellei (coord.). *Asistencia Educativa en Chile: ¿Aporte al mejoramiento Escolar?* Santiago: Editorial Ocho libros (coautora: Ana Rojas).
 4. **Bellei, Cristián; González, Pablo; Valenzuela, Juan Pablo** Fortalecer de la educación pública: un desafío de interés nacional. In *Ecos de la revolución pingüina* (Cristián Bellei, Daniel Contreras and Juan P. Valenzuela, editores). Editorial Pehuén (en prensa).
 5. **Bellei, Cristián; Sotomayor, Carmen; Valenzuela, Juan Pablo**, “¿Cómo se hicieron los estudios de caso sobre Asistencia Técnica Educativa?” (with D. Raczynski, A. Osses and D. Salinas), In C. Bellei (coord.) *Asistencia Técnica Educativa en Chile: ¿Aporte al Mejoramiento Escolar?*, pp. 9-30. CONICYT, FONDEF and CIAE. Ocho libros Editores, Santiago, Chile. (2010)
 6. **Bellei, Cristián; Valenzuela, Juan Pablo** (with Alejandro Sevilla and Alejandra Osses) “¿Qué explica las diferencias de resultados PISA Matemática entre Chile y algunos países de la OCDE y América Latina?”. In *¿Qué nos dice PISA sobre la educación de los jóvenes en Chile?*, pp.105-148, OEI y Ministerio de Educación de Chile, Santiago, Chile. (También versión en inglés en “*What does PISA tell us about the education of high school students in Chile?*”). (2009)
 7. **Bellei, Cristián; Valenzuela, Juan Pablo**. “¿Qué explica las diferencias de resultados PISA Lenguaje entre Chile y algunos países de la OCDE y América Latina?” (with Alejandro Sevilla and Alejandra Osses). In *¿Qué nos dice PISA sobre la educación de los jóvenes en Chile?*, pp.149-170, OEI y Ministerio de Educación de Chile, Santiago, Chile. (También versión en inglés en “*What does PISA tell us about the education of high school students in Chile?*”). (2009)
 8. **Bellei, Cristián; Valenzuela, Juan Pablo**. ¿Están las condiciones para que la docencia sea una profesión de alto estatus en Chile? In Martinic, S. & Elacqua, G. (eds) *Fin de Ciclo: Cambios en la Gobernanza del Sistema Educativo*. Santiago, Facultad de Educación, Pontificia Universidad Católica de Chile y Oficina Regional para América Latina y el Caribe UNESCO.
 9. **Bellei, Cristián; Valenzuela, Juan Pablo** Viejos dilemas y nuevas propuestas en la política educacional chilena. In *Ecos de la revolución pingüina* (Cristián Bellei, Daniel Contreras and Juan P. Valenzuela, editores). Editorial Pehuén (en prensa) (with Daniel Contreras).
 10. **Muñoz L., Carlos**. (with Ávila, R.; Rivero M.; Domínguez, P.). El Estudio y la formación ciudadana en la Escuela. Una aproximación a partir de métodos cuantitativos y cualitativos de Investigación. In *Metodología de Investigación en Didáctica de las Ciencias Sociales*, Editorial Fernando el Católico. España. (2010).
 11. **Pardo, Marcela**. “Estado del Arte sobre la Atención Educativa de la Primera Infancia en el Cono Sur. OEA-CAF”. In press.

12. **Sáenz, M.; Sánchez, J.** Indoor Orientation and Mobility for Learners Who are Blind. In Brenda K. Wiederhold, Giuseppe Riva, Sun I. Kim (Editors), *Annual Review of Cybertherapy and Telemedicine 2010, Imaging the Future*, Chapter 32, summer 2010. San Diego, CA: Interactive Media Institute, Volume 8, pp. 131-134. (2010).
13. **Sánchez, J.**, Mendoza, C., Salinas, A. Mobile serious games for collaborative problem solving. In Brenda K. Wiederhold and Giuseppe Riva (Editors) the *Annual Review of Cybertherapy and Cybermedicine 2009*. Amsterdam: Studies in Health Technology and Informatics (SHTI) series, IOS Press, Volume 144, pp. 193-197. (2009).
14. **Sánchez, Jaime; Sáenz, Mauricio**, Salinas, Álvaro. "Videojuegos Móviles para Aprender y Pensar en Ciencias". In C. Vaz de Carvalho, M. Llamas, and R. Silveira (Eds.), *TICAI 2008: TICs para el Aprendizaje de la Ingeniería*, ISBN 978-972-8688-63-9, Capítulo 8, Págs.: 53-60 IEEE, Sociedad de Educación: Capítulos Español y Portugués. (2009).
15. **Sotomayor, Carmen.** (with Sánchez, M.). "Programa Interactivo para la Educación Básica. Fundación Educacional Arauco". In: Cristián Bellei (coord.). *Asistencia Educativa en Chile: ¿Aporte al mejoramiento Escolar?* Santiago: Editorial Ocho libros. (2010)
16. **Valenzuela, Juan Pablo** (with Alejandra Osses) "Proyecto Lector Antofagasta. Sociedad de Instrucción Primaria". In C. Bellei (coord.) *Asistencia Técnica Educativa en Chile: ¿Aporte al Mejoramiento Escolar?*, pp. 115-148. CONICYT, FONDEF and CIAE. Ocho libros Editores, Santiago, Chile. (2010)
17. **Valenzuela, Juan Pablo** (with Amanda Telias) "Caracterización laboral de los docentes de educación básica con estudios superiores no tradicionales". In *Investigación e Innovación: Una contribución al desarrollo de la educación en Chile*, Ediciones Facultad de Educación Universidad de Concepción, pp.223-248. (2009)

h) Monographs

1. **Lacourly, Nancy.** "Estadística Multivariada", monograph Fondef D05i-10211, 120 páginas, (2009-2010).
2. **Lacourly, Nancy.** "Introducción a la Estadística", monograph Fondef D05i-10211, 100 páginas (2009).
3. **Valenzuela, Juan Pablo; Pardo, Marcela**, Lucchini, G.; Cuadrado, B.; Recart, I. "Estudios de Contexto, Apreciación, Necesidades y Expectativas Educativas y Culturales en la Provincia de Arauco." Fundación Educacional Arauco (2009)
4. **Edwards, Marta; Pardo, Marcela;** Gómez, M. "Evaluación del Desarrollo Infantil a Gran Escala. Algunas Consideraciones para Avanzar en Chile". UNICEF. In press.

i) Working Papers

1. **Mizala, Alejandra** (with Florencia Torche) "School Discipline in Chile" manuscript (2010)

2. **Mizala, Alejandra** (with Ben Schneider) "The Political Economy of Regulating Private Provision of Education in Chile" manuscript (2010)
3. **Mizala, Alejandra**. (with Bernardo Lara and Andrea Repetto) "Una Mirada a la Efectividad de los Profesores en Chile" manuscript (2010).
4. **Sotomayor, Carmen; Parodi, Giovanni; Coloma, Carmen Julia; Ibáñez, Romualdo; Cavada, Paula**. "La Formación inicial de docentes de educación general básica en el área de lenguaje y comunicación en Chile: hacia un perfil de su competencia disciplinar". En evaluación Revista Alpha de la Universidad de Los Lagos. (2010)
5. **Valenzuela, Juan Pablo**. "¿Por qué los jóvenes chilenos mejoraron su competencia lectora en la prueba PISA?". (with Cristián Bellei, Alejandra Osses and Alejandro Sevilla). manuscript (2009)
6. **Valenzuela, Juan Pablo; Bellei, Cristián**. "Working conditions and teachers' status in a market oriented educational system. The case of Chile". Núcleo Milenio Condición Docente and CIAE, en UKIT, Oxford University. (2009)
7. **Valenzuela, Juan Pablo; Bellei, Cristián** (with Sevilla, A. and De los Ríos, D.) "Remuneraciones de los docentes en Chile: resolviendo una aparente paradoja" Serie Documentos de Orientación para Políticas Públicas (2). Núcleo Milenio La Profesión Docente en Chile, CIAE, Universidad de Chile. (2010)

2. CONTRIBUTION TO HUMAN CAPITAL FORMATION

a) Formal or institutional training activities. Courses taught

1. **Araya, Roberto**; Conca, C. & Fischer, A. "Razonamiento, Evolución y Emocionalidad". U. de Chile.
2. **Araya, Roberto**. 3 cursos de perfeccionamiento a profesores (120 profesores)
3. **Ávalos, Beatrice**. Seminario: Teoría y práctica sobre formación docente y perfeccionamiento docente en América Latina. Magíster en Políticas Educativas, U. Alberto Hurtado.
4. **Ávalos, Beatrice**. Seminario sobre Docentes, Pontificia Universidad Católica de Chile, Programa de Doctorado
5. **Ávalos, Beatrice**. Curso: Investigación cualitativa en Educación, Programa de Doctorado en Gestión Educativa, Universidad de Playa Ancha de Ciencias de la Educación
6. **Bellei, Cristián**. "Políticas educacionales". Programa de Magíster en Políticas Públicas, Escuela de Economía de la Universidad de Chile.

7. **Dartnell, Pablo.** Curso de Álgebra Lineal en la Escuela de Ingeniería, Fac. de Ciencias Físicas y Matemáticas, Universidad de Chile. (2009)
8. **Dartnell, Pablo .** Curso de Álgebra en la Escuela de Ingeniería, Fac. de Ciencias Físicas y Matemáticas, Universidad de Chile. (2010)
9. **González, Pablo.** Economía de la Educación. Curso dictado en el Magister en Gestión y Políticas Públicas, Depto. Ingeniería Industrial. Universidad de Chile
10. **Mizala, Alejandra.** Universidad Adolfo Ibáñez: Profesora Invitada Magíster en Educación, (Primavera 2009).
11. **Sánchez, Jaime.** Proyectos de Informática Educativa (Postítulo en Informática Educativa) Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
12. **Sánchez, Jaime** Aprendizaje y Cognición (Postítulo en Informática Educativa) Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
13. **Sánchez, Jaime** Cultura Informática (Postítulo en Informática Educativa) Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
14. **Sánchez, Jaime** Usos Educativos de Internet (Postítulo en Informática Educativa) Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
15. **Sánchez, Jaime** Taller de Usabilidad de Interfaces de Software Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
16. **Sánchez, Jaime** Diseño y Desarrollo de Videojuegos Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
17. **Sánchez, Jaime** Interfaces Humano-Computador Departamento de Ciencias de la Computación, Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile
18. **Sánchez, Jaime** Proyectos de informática Educativa (Magíster en Educación, mención Informática Educativa) Departamento de Educación, Facultad de Ciencias Sociales de la Universidad de Chile:
19. **Sánchez, Jaime** Interacción Humano – Computador (Magíster en Educación, mención Informática Educativa) Departamento de Educación, Facultad de Ciencias Sociales de la Universidad de Chile:
20. **Soto-Andrade, Jorge.** Magister en Didáctica de las Ciencias, Sesión sobre Metáforas y Representaciones en Didáctica de las Ciencias, Pontificia Universidad Católica de Valparaíso, 9 de Julio de 2010.

21. **Soto-Andrade, Jorge.** Curso de Invierno sobre Didáctica de la Matemática para Profesores de Enseñanza Básica y Media, Talca, 19-21 Julio 2010, Programa U x Chile, Universidad de Chile – Universidad de Talca.
22. **Valenzuela, Juan Pablo.** Universidad de Chile, Coordinador Diplomado en Políticas en Educación, Facultad de Economía y Negocios, Universidad de Chile, (2010).
23. **Valenzuela, Juan Pablo.** Universidad Adolfo Ibáñez: Profesor Invitado Magíster en Educación, (Primavera 2009).
24. **Valenzuela, Juan Pablo.** Universidad de Chile, Facultad de Economía y Negocios: Profesor de Políticas de Economía de la Educación, with Patricia Medrano (Primavera 2009).
25. **Valenzuela, Juan Pablo.** Universidad de Chile, Facultad de Economía y Negocios: Profesor de Economía de la Educación, Magíster y Doctorado en Economía, with Patricia Medrano (Primavera, 2009).
26. **Varas, María Leonor.** “Álgebra” (para alumnos de primer semestre) Escuela de Ingeniería y Ciencias, Facultad de Ciencias Físicas y Matemáticas. (2009, 2010)
27. **Varas, María Leonor.** “Álgebra Lineal” (para alumnos de segundo semestre) Escuela de Ingeniería y Ciencias, Facultad de Ciencias Físicas y Matemáticas. (2009).

Following the successful model of the University of California, Berkeley (CalTeach), that seeks to attract students of scientific careers to teaching, the CIAE organized two General Training courses at Universidad de Chile for students of scientific careers. Students pursuing scientific careers at several faculties of this university prepare themselves and provide assistance every two weeks in courses given at elementary schools with high levels of vulnerability, and they finally teach a class alone. Both courses are developed at the CIAE, they are:

28. **Varas, María Leonor.** “Mathematical Reasoning at School”, general training course for students from several faculties, given at the CIAE, in the first semester of 2010, with the participation of Professor Lino Cubillos, Director of the Department of Pedagogic Studies.
29. **Devés, Rosa.** “Research in School”, general training course for students pursuing scientific careers, first semester of 2010.
30. **The Latin American School for Education, Cognitive and Neural Sciences**
San Pedro de Atacama, Chile. Hotel Kunza, March, 2011

The Center was awarded a grant from the James S. McDonnell Foundation of US\$1.2m for the organization of three international summer schools, (2010-2012) in the area of Cognitive Sciences, Neurosciences and Education with the purpose of specialising a new generation of neuroscientists in education.

The first Latin American School for Education, Cognitive and Neural Sciences that would take place in San Pedro de Atacama, Chile, March 15-26, 2010, had to be

postponed due to the earthquake that swept the country last February. Thus the first summer school, organized by the Center and the McDonnell Foundation, has been rescheduled to next March 2011. Thirty researchers have been confirmed and around sixty mainly pre- and post-doctorate students from different parts of the world will participate. The call for applications and any other additional information can be found in <http://www.laschool4education.com>.

b) Student training

Master and PhD theses

Completed

1. **Aguayo, Luis.** Gustavo Moraga Cid. "Determinantes moleculares que regulan los efectos de etanol y anestésicos generales sobre la función de receptores de glicina y GABA A. Doctorado en Biología Celular y Molecular. Universidad de Concepción.
2. **Bellei, Cristián.** Ana Rojas, "¿Logran las escuelas vulnerables instalar procesos de mejoramiento al implementar asistencia técnica educativa? Evaluación de impacto". Magíster en Sociología, Universidad de Chile.
3. **González, Corina.** Paola Matallana "Teorías implícitas sobre Ciencia en alumnos secundarios" Magister en Didáctica de las Ciencias Experimentales, Facultad de Ciencias, Pontificia Universidad Católica de Valparaíso.
4. **Mizala, Alejandra** Valentina Quiroga "El Efecto del Empleo de las Madres sobre el Desempeño Escolar de sus Hijos" Magister en Economía Aplicada, Depto. Ingeniería Industrial, Universidad de Chile.
5. **Peña, Marcela.** Verónica Figueroa González. "Representaciones fonológicas en sordos preverbales: ¿Cómo procesa el cerebro sílabas en ausencia de sonidos?" Doctorado en Psicología. Pontificia Universidad Católica de Chile.
6. **Sánchez, Jaime.** Mauricio Sáenz Correa. "Diseño de tecnología móvil para la identificación de posición y orientación de personas ciegas en ambientes cerrados." M.Sc. Depto. Ciencias de la Computación, Universidad de Chile..
7. **Soto-Andrade, Jorge.** Raquel Barrera, Master 2 en Didáctica de la Matemática, Université de Paris 7 (2009), thesis committee.
8. **Soto-Andrade, Jorge.** Carolina Ruminot, Master 2, en Didáctica de la Matemática, Université de Paris 7 (2009), apoyo tutorial.
9. **Valenzuela, Juan Pablo.** Gabriela Toledo "Calidad docente y logro escolar: enfrentando el problema de ordenamiento no aleatorio entre características de profesores y alumnos". Magíster en Economía, Facultad de Economía y Negocios, Universidad de Chile

10. **Valenzuela, Juan Pablo.** Carlos Portillo “El impacto de la gestión educativa en el rendimiento académico de los alumnos en las escuelas peruanas”. Magíster en Economía, Facultad de Economía y Negocios, Universidad de Chile.
11. **Verónica López.** Swapna Puni Estévez Singh, “Contextos Educativos Facilitadores De Aprendizajes En Personas Del Espectro Autista”. Magíster en Psicología Educacional, Facultad de Psicología, Universidad Alberto Hurtado.

In progress

1. **Aguayo, Luis.** Carla Pacheco. “Alpha sinucleína media, los mecanismos patogénicos de la enfermedad de Parkinson.” Doctorado en Biología Celular y Molecular. Universidad de Concepción.
2. **Aguayo, Luis.** Fernando Sepúlveda Briceño. “Efecto de agregados B-amiloides sobre la sinapsis: evaluación en un modelo de plasticidad sináptica en neuronas de hipocampo” Doctorado en Biología Celular y Molecular. Universidad de Concepción.
3. **Aguayo, Luis.** Gabriela Zegers. “Neuroprotección inducida por bajas concentraciones de etanol en un modelo de la enfermedad de Alzheimer.” Magister en Fisiología. Universidad de Concepción.
4. **Aguayo, Luis.** Gonzalo Muñoz. “Caracterización del efecto neuroprotector de etanol frente a la acción neurotóxica de agregados del péptidoB-amiloide en cultivos primarios de hipocampo de rata.” Doctorado en Biología Celular y Molecular. Universidad de Concepción.
5. **Aguayo, Luis.** Magdalena Cuevas Troncoso. “Efectos sinápticos del péptido soluble a1-40 en neuronas hipocámpales de ratón en cultivo celular.” Doctorado en Ciencias Biológicas. Universidad de Concepción.
6. **Aguayo, Luis.** Patricio Castro Maldonado. “Determinantes moleculares del dominio citoplasmático de los receptores de glicina y GABA A que participan en la modulación por Gy Etanol” Doctorado en Biología Celular y Molecular. Universidad de Concepción.
7. **Aguayo, Luis.** Paulina Gómez. “Efectos de Antiinflamatorios no esteroideos sobre actividad sináptica en neuronas de cerebro.” Magister en Fisiología. Universidad de Concepción.
8. **Aguayo, Luis.** Trinidad Maliqueo. “Modulación del receptor de glicina por etanol en neuronas hipoglosales y espinales.” Doctorado en Farmacología. Universidad de Chile.
9. **Ávalos, Beatrice.** Pedro Quiroga. “Concepciones y creencias de los formadores y futuros profesores de Enseñanza Básica con foco en Matemáticas” Magíster, Universidad Alberto Hurtado. .
10. **Bellei, Cristián.** Clemencia González: “Asistencia Técnica Educativa: Factores que influyen en la sostenibilidad de los cambios”. Magíster en Política Educativa, Universidad Alberto Hurtado.

11. **Dartnell, Pablo.** David Gómez, “Estudio de la percepción: Un enfoque desde la matemática y la ciencia cognitiva” Doctorado en Ciencias de la Ingeniería, mención Modelación Matemática, Universidad de Chile.
12. **Dartnell, Pablo.** Jairo Navarrete, “Modelamiento matemático de metáforas y aprendizaje” Doctorado en Ciencias de la Ingeniería, mención Modelación Matemática, Universidad de Chile.
13. **Mizala, Alejandra.** Daniela García. “Incentivos y motivaciones para ingresar a la carrera docente. El camino hacia la obtención de profesores efectivos” Magister en Gestión y Políticas Públicas, Depto. Ingeniería Industrial, Universidad de Chile.
14. **Mizala, Alejandra.** Marcela Guajardo “Gestión escolar en redes educativas. El caso de la Fundación Belén Educa” Magister en Gestión y Políticas Públicas, Depto. Ingeniería Industrial, Universidad de Chile.
15. **Sánchez, Jaime.** Julio Miranda. “Factores que influyen en la interacción virtual en un curso e-Learning” Programa de Magíster en Educación con mención en Informática Educativa, Facultad de Ciencias Sociales, Universidad de Chile.
16. **Soto-Andrade, Jorge.** María Angélica Vega (Facultad de Ciencias Químicas y Farmacéuticas, Universidad de Chile), “El ordenador en el proceso Enseñanza – aprendizaje: El caso de la derivada en primero de ingeniería.” Doctor en Didáctica de la Matemática, Universidad de Huelva, España, (2009-2010). Codirector.
17. **Soto-Andrade, Jorge.** Pamela Reyes-Santander “Enseñanza de la teoría de grupos a alumnos aventajados de Gymnasium”, Doctor en Didáctica de la Matemática, Universidad de Augsburg, Alemania, (2009-2010), Co-director,
18. **Soto-Andrade, Jorge.** Raquel Barrera, Doctorado en Didáctica de la Matemática, Université de Paris 7 (2010), member of the thesis committee.
19. **Soto-Andrade, Jorge.** Carolina Ruminot, Doctorado en Didáctica de la Matemática, Université de Paris 7 (2010), member of the thesis committee.
20. **Soto-Andrade, Jorge.** Elizabeth Montoya, Doctorado en Didáctica de la Matemática, Université de Paris 7 (2009-2010), member of the thesis Committee.
21. **Sotomayor, Carmen.** Daniela Molina “Estudio comparativo de los esquemas argumentativos empleados por estudiantes de seis niveles de Educación Básica y Media de dos liceos de Santiago de Chile.” Magíster en Lingüística, Facultad de Filosofía y Humanidades, Universidad de Chile.
22. **Sotomayor, Carmen.** Rocío Esquivel “Représentations et pratiques d’enseignement des futurs enseignants d’universités au Chili au regard du nouveau curriculum officiel de langue maternelle du primaire”. Doctor en Educación, Universidad de Sherbrooke, Canadá.

23. **Tanter, Eric.** Paul Saint Leger Morales. "Developing context-aware Systems using expressive trace-based mechanisms." Doctorado en Ciencias, mención Computación, Universidad de Chile
24. **Valenzuela, Juan Pablo.** Alejandra Calvo "Eficacia, eficiencia y estructura de costos de los colegios municipales" Magíster en Economía, Facultad de Economía y Negocios, Universidad de Chile.
25. **Valenzuela, Juan Pablo.** Camila Serra "Certificaciones inicial docente y evaluación docente como indicadores de la calidad de los profesores". Magíster en Economía, Facultad de Economía y Negocios, Universidad de Chile.
26. **Valenzuela, Juan Pablo.** Cecilia Oreiro "Desempeño educativo de Uruguay 2003-2006" Magíster en Economía, Facultad de Economía y Negocios, Universidad de Chile
27. **Valenzuela, Juan Pablo.** Karina Maya "Efectos del término de la educación pública: el caso de la comuna de Alto Hospicio" Magíster en Políticas Públicas, Facultad de Economía y Negocios, Universidad de Chile.
28. **Varas, María Leonor.** Daniela Jiménez. "Instructional Explanations in Mathematics Lessons- a Videostudy" Doctorate in Educational Sciences, Goethe Universität Frankfurt
29. **Varas, María Leonor.** María Isabel Font. "Ecological Misconceptions and the Teaching of Ecology in Flemish Secondary schools" Doctorate in Educational Sciences, Katholieke Universiteit Leuven

Undergraduate theses

Completed

1. **Aguayo, Luis.** Andrés Guzmán "Determinantes moleculares en la sensibilidad a etanol de receptores de glicina compuestos por subunidades e3". Ingeniería en Biotecnología Marina y Acuicultura, Universidad de Concepción (2009).
2. **Aguayo, Luis.** Pía Vidal "Activación de la proteína Ges por concentraciones farmacológicas de etanol". Bioingeniería, Universidad de Concepción (2009).
3. **González, Corina.** Leyla Umanzor and María José Villarroel "Visiones de Naturaleza de la Ciencia en Estudiantes de 3° y 4° Medio de la Región de Valparaíso; y su Relación con el Estado de Innovación de sus Profesores de Ciencias". Trabajo de titulación para optar al Título de Profesor de Biología y Ciencias Naturales, Pontificia Universidad Católica de Valparaíso.
4. **López, Verónica.** Alexis Sandoval, "Concepciones y aprendizaje de las ciencias en estudiantes de la Región de Valparaíso". Trabajo para optar al título de Psicólogo. Escuela de Psicología, Pontificia Universidad Católica de Valparaíso.
5. **Mizala, Alejandra.** Carla Benedetti Bustos, "Análisis y Evaluación de la Gestión Educacional Municipal". Memoria para obtener el título de Ingeniero Civil Industrial.

6. **Mizala, Alejandra** Javier Mauricio Ayala Carrere “Estudio de las Variables Determinantes de los Padres en la Elección de Colegios para Enseñanza Básica”, Memoria para obtener el título de Ingeniero Civil Industrial, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile.
7. **Sánchez, Jaime**. Héctor Flores. “Videojuegos para desarrollar habilidades de representación conceptual. Memoria de Ingeniero Civil en Computación.” Depto. Ciencias de la Computación, Universidad de Chile. 2010
8. **Sánchez, Jaime**. Matías Espinoza. “Desarrollo de juego educativo RPG en teléfonos móviles.” Memoria de Ingeniero Civil en Computación. Depto. Ciencias de la Computación, Universidad de Chile. 2009
9. **Sánchez, Jaime**. Luis Valdés. “Videojuego para el aprendizaje de la biología en niños ciegos.” Memoria de Ingeniero Civil en Computación. Depto. Ciencias de la Computación, Universidad de Chile. 2009
10. **Sánchez, Jaime**. Angelo Tadres. “Utilización de realidad aumentada e interfaces basadas en audio para facilitar la movilidad y orientación de personas ciegas.” Ingeniero Civil en Computación. Depto. Ciencias de la Computación, Universidad de Chile. 2010
11. **Sánchez, Jaime**. Juan Pablo Rodríguez. “Realidad Aumentada para el Aprendizaje de Ciencias en Niños de Enseñanza General Básica.” Ingeniero Civil en Computación. Depto. Ciencias de la Computación, Universidad de Chile. 2010
12. **Sánchez, Jaime**. Iván Galaz. “Interfaz multitáctil con retroalimentación auditiva para aprendices no videntes.” Ingeniero Civil en Computación. Depto. Ciencias de la Computación, Universidad de Chile. 2010
13. **Sánchez, Jaime**. César Castro Otto. “Sistema de apoyo para el desenvolvimiento autónomo de personas no videntes en supermercados.” Ingeniero Civil en Computación. Depto. Ciencias de la Computación, Universidad de Chile. 2010
14. **Valenzuela, Juan Pablo**. Paula Aravena “Segregación docente en el sistema escolar chileno”. Ingeniería Comercial, mención economía, Facultad de Economía y Negocios, Universidad de Chile
15. **Valenzuela, Juan Pablo**. Amanda Castillo “El efecto de los certificados de la calidad de los docentes sobre los logros escolares de sus alumnos”. Ingeniería Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile
16. **Varas, María Leonor**. J. F. Borroni, K. A. Bustamante, R. C. Cofré “Dificultades en la Comprensión de Suma y División de Fracciones en Estudiantes de Pedagogía en Matemática y Pedagogía Básica. Propuesta de Estudio de Caso como Herramienta de Formación Docente” Co-tutora de la memoria para optar al grado de Licenciado en Educación y al título de Profesor de Enseñanza Media en Matemáticas e Informática Educativa, Universidad Católica Silva Henríquez. (2009)

In progress

1. **Dartnell, Pablo.** Gonzalo Mena: “Modelamiento matemático de fenómenos cognitivos” Memoria de Ingeniería Civil Matemática, Universidad de Chile
2. **Pardo, Marcela.** Felipe Acuña “La visión de los docentes sobre las políticas de evaluación e incentivo al desempeño”. Antropólogo, Facultad de Ciencias Sociales, Universidad de Chile.

c) Young researchers and Postdoctoral Fellows Work

Young Researchers

Alejandro Sevilla, Paula Cavada, Danae de los Ríos, Diego Fuenzalida and Felipe Acuña are young researchers of the Teaching Profession in Chile. They are co-authors of several of the papers listed in the report (see list of papers). Particularly, Paula Cavada, a psychologist, who will pursue her doctorate at the University of Copenhagen, has worked on the study “Initial Training of Elementary Education Teachers in the Area of Language and Communication”.

Alejandro Sevilla (economist), Alejandra Osses (Master of Science (MS) in Sociology of Education) and Claudio Allende have worked in investigations related to the analysis of standardized measurements of learning outcomes (PISA SIMCE).

Claudio Allende has participated in research on academic mobility of Chilean students and on iconic public secondary schools.

Ana Rojas (MS in Sociology) has been involved in research on educational assistance programs: process evaluation and impact assessment.

Liliana Morawietz has worked on two studies: “Study on progress in implementing the PEIB-origins” and “Content validation of items preliminarily selected as a tool to assess the development of children aged 0-6 years, in relation to children’s ethnicity” within the framework of the project “Construction of an instrument to assess the development of Chilean children aged 0-6 years”.

Mariel Gómez and Pilar Zalaquett have worked on the project “Construction of an instrument to assess the development of Chilean children aged 0-6 years.”

Daniela Molina, MS in Linguistics and Language Teacher, Carolina Hernandez, MS in Linguistics, and Manuela Biedma, Language Teacher, have worked on the project “Characteristics of writing production in elementary school children”.

Ricardo Martínez, Bachelor of Arts in Linguistics and Macarena Silva, Psychologist, doctoral candidate in Psychology at Lancaster University, have worked on the project “Initial training standards for secondary education teachers in the area of Language”.

Paulina Sepúlveda, Information System Engineer, has worked on the project “Educational Assistance to Schools in Chile”.

Valentina Abufhele and Beatriz Fernández have worked on the projects “Standards for public educational providers” and “Certification of technical educational assistance to schools”.

Tania Hernández, Master in Public Administration and International Development, has worked on the “Determinants of teaching as a career in Chile.

This year 2010, four young researchers of CIAE will start graduate studies abroad:

Alejandra Osses: PhD in Education, University of Melbourne, Australia.

Paula Cavada: PhD in Psychology, University of Copenhagen.

Liliana Morawietz: Master of Arts in Oral History, Institute for Social and Economic Research and Policy, Columbia University.

Valentina Abufhele. Master of Arts in Sociology, Columbia University.

Moreover, three young researchers are applying to Chilean government scholarships to study abroad.

Mariel Gómez is applying to the Institute for Early Childhood Education and research, University of British Columbia, Canada.

Paulina Sepúlveda is applying to the Master of Sciences Knowledge and Information Systems Management, University of Southampton, UK.

Alejandro Sevilla is applying to the PhD Program in Statistics, University of Manchester, UK.

Post Doctoral Fellows

Carolina Holtheuer: “An exploratory study of early reasoning in children: the case of generic meanings in Spanish”

The postdoctoral project aims to investigate how children aged 4 – 6 years reason and process abstract generic concepts (giraffes have long necks) and differentiate them from specific instances (these two giraffes have short necks.) Recent research indicates that knowledge acquired by children through the use of generic language (in contrast to the use of specific language) is conceptually represented in a more central and significant manner, suggesting that the generic language promotes early conceptual development. In order to learn how children reason and process generic meanings, two studies will be carried out. The first one consists in conducting four linguistic experiments using two methodological methods that are widely used in psycholinguistics: The task of assessing accuracy and the task of selecting drawings. The second study consists in assessing the overall understanding of oral texts.

Patricio Rodríguez. “Models of study for ICT-supported educational programs, applications, and generalization to the non-ICT field”.

The postdoctoral project of Patricio Rodríguez intends to apply the conceptual model for evaluating educational software developed and preliminarily tested in his doctoral dissertation, to the analysis of ongoing and completed projects using these technologies, with the multiple purpose of refining and validating the model most widely, contributing to the optimization of ongoing projects and to improve the design of future projects of the CIAE and associated centers. It also seeks to extend the model to more general educational projects (not necessarily with info-technologies). The work will involve, in addition to theoretical studies and analysis, participation in the design of experiments and validations in ongoing projects.

3. NATIONAL COOPERATION

1. **CIAE (Leonor Varas)** has collaborated since 2009 with the Association of Mathematics Teaching Students, which groups students from *Universidad Católica de Valparaíso, Universidad de Santiago de Chile, Universidad Católica Silva Henríquez, Universidad del Bío Bío, Universidad de la Frontera, Temuco, Universidad Católica de Temuco* and *Universidad de Los Lagos*, all universities that provide the career in Mathematics Teaching.
2. The project entitled “Standards for training of elementary education teachers” has generated cooperation by **CIAE (Leonor Varas, Patricio Felmer)** with other universities nationwide. The project’s drafting team was composed of researchers from the following universities: *Pontificia Universidad Católica de Chile, Universidad Andrés Bello* and *Universidad Metropolitana de Ciencias de la Educación*. The project’s consultative team included researchers from the following national universities: *Universidad Católica del Maule, Universidad Santo Tomás, Universidad de Santiago, Universidad de Talca, Universidad de Los Lagos* and *Universidad de Tarapacá*.
3. The project called “Construction of standards for the training of pre-school teachers” has also generated collaboration by the **CIAE (Marcela Pardo)** with other universities and research centers in the country. The core team includes researchers from UNICEF, *Pontificia Universidad Católica de Chile, Universidad de Viña del Mar, Universidad Central, Fundación Educacional Arauco, Universidad Academia de Humanismo Cristiano, Universidad Diego Portales, Universidad Alberto Hurtado, Universidad de Santiago* and from Harvard University’s Project “*Un Buen Comienzo*” (A Good Start). In this project, work has also been carried out with the directors of the pre-school teacher career of *Universidad de Chile, Universidad de Concepción, Universidad Católica de Valparaíso, Universidad Metropolitana de Ciencias de la Educación, Universidad de Antofagasta, Universidad Católica de Temuco, Universidad Central, Universidad Cardenal Raúl Silva Henríquez* and *Universidad Santo Tomás*.
4. The **CIAE (Juan Pablo Valenzuela)** has collaborated with the Center for Public Policy of *Pontificia Universidad Católica de Chile*, providing joint support to the Chilean Association of Municipalities in financial matters for the municipal sector in Chile. It has

also cooperated with the Center for Public Policy at the PUC in the training program for municipal Councilors.

4. INTERNATIONAL COOPERATION

a) International collaboration

The project “Standards for training of elementary education teachers language and mathematics” benefited from the collaboration of the following researchers, as international consultants: Monique Lebrun, Université du Québec à Montréal; Kate Caine, University of Lancaster, England; Wong Khoo Yoong, NIE, Singapore, Lee Ngan Hoe, NIE Singapore Yeap Ban Har NIE Singapore Sahron Senk, Michigan State University, USA; Sandra Crespo, Michigan State University, USA.

b) Visiting Scholars

1. Professor Edward Melhuish, from University of London, for the Project FONDEF 1029. A workshop was conducted to analyze the predictive ability of the instrument to assess the development of children aged 0-6 years. Professor Melhuish also gave a lecture to researchers in the field, 2009.
2. Professor Catherine Snow, from Harvard University, for the Project FONDEF 1029. A workshop was conducted to discuss the preliminary matrix for the language dimension of the instrument to assess the development of children aged 0-6 years. Professor Snow also gave a lecture to researchers in the field, 2009.
3. Nicci Nunez, Director of the CalTeach Program of University of California at Berkeley, September 26-30, 2009. Meetings were held to learn about the experience of the University of Berkeley with the CalTeach Program, in order to assess the possibility of implementing something similar at the Universidad de Chile. As a result of this, two general training courses were designed and taught in the 2010 fall semester.
4. Erkki Pehkonen, Professor Emeritus at the University of Helsinki, visited us in September 2009 to prepare a joint research project in mathematics education of CIAE- Universidad de Chile, with the Department of Teacher Education, University of Helsinki, funded by AKA (Finland) and CONICYT (Chile), which was awarded in a contest that selected 4 out of 15 projects submitted. This project involves researchers from the CIAE, the CMM and the Department of Teaching Studies. Two mathematics teachers graduated from the Department of Teaching Studies will be trained as new researchers in mathematics education (with the aim to pursue doctoral programs in Helsinki).
5. Ben Schneider, Associate Professor, Department of Political Science at the Massachusetts Institute of Technology (MIT). Professor Schneider has paid us three visits during the period June 2009-July 2010, as a result of the joint research project he is conducting along with Alejandra Mizala “Market Mechanisms, Private Participants, and Policy Making in Latin America”, which is part of the Educational Policies area.
6. Emilio Tenti Fanfani, an expert from the International Institute for Educational Planning of UNESCO and Associate Professor at the Universidad de Buenos Aires. July, 2010.

7. Denise Vaillant (GTD-PREAL Coordinator, Professor at Universidad ORT, Montevideo, Uruguay. Denise Vaillant is an external advisor to the Teaching Unit of CIAE, 2009.
8. Researchers Marilyn Cochran-Smith, Boston College, USA; Lily Orland-Barak, University of Haifa, Israel, and Christine E. Sleeter, California State University-Monterey Bay, USA, participated in the seminar organized by the *Pontificia Universidad Católica de Valparaíso* (PUCV) and co-funded by the CIAE on "The Practical Training in the Process of Learning to Teach". November, 26-27, Viña del Mar.
9. Researchers Dalila Andrade (Academic, Faculty of Education at *Universidade Federal de Minas Gerais*) and Deolidia Martínez (Researcher, Instituto de Investigaciones Marina Viltre, of the Confederation of Education Workers of the Argentine Republic) participated in the International Symposium on Teaching Work and New Identities. The Right to Education and Education Policies in Latin America (Santiago-Valparaíso-Viña del Mar, June 7-11, 2010) organized by the CIAE researchers who belong to the PUCV.
10. Dr. Viviane Robinson, from the University of Auckland, New Zealand. In the framework of her visit, a seminar was held on the training of principals and the experience of the training program for principals in New Zealand.
11. Dr. Jill Pinkney-Pastrana, University of Wisconsin-Eau Claire, who has participated in the discussion about inter-school learning in the context of the implementation of the Preferential School Subsidy Law. A research project in this field is being prepared with Dr. Pinkney-Pastrana.
12. Dr. Ricardo Matos, Scientific Adviser, Trainer & Technical Writer at Tobii Technology AB (Stockholm Area, Sweden), who gave a theoretical and practical talk on the uses of the Eye Tracking Technology in cognitive, developmental, and linguistic psychology.
13. Professor Michael Posner, University of Oregon. March 15-21, 2010.
14. Professor Eliana Montero Rojas, Institute of Psychological Research, *Universidad de Costa Rica*, June 1-5, 2009, Workshop on University Equity, Evaluation, and Selection.
15. Professor Jeanette Villalobos, Institute of Psychological Research, *Universidad de Costa Rica*, June 1-5, 2009. Workshop on University Equity, Evaluation, and Selection.
16. Researcher Eugenio Gonzalez, Director IEA/ETS Research Institute Center for Global Assessment Educational Testing Service, Princeton New Jersey. June 1-5, 2009. Workshop on University Equity, Evaluation, and Selection.

c) Visits Abroad

Luis Ahumada, Visiting Professor at the Social Justice Research Center University of Wyoming, Laramie, January-February (2010)

Cristian Bellei, School of Education at Harvard University (May 2010). Methodological advice by Professors Richard Murnane and John Willett in the framework of a study on the impact of educational technical assistance programs in Chile.

Carmen Montecinos, Visiting professor, School of Education University of Wyoming. She taught doctorate and master's courses.

Marcela Peña, Research stage at the Language Development and Cognition Laboratory, *Scuola Internazionale Superiore di Studi Avanzati* (SISS), Trieste, Italy, from May 31 to July 29, 2010.

Jaime Sánchez has visited the following institutions:

2010 (July), Columbia University, New York, USA

2010 (June), *Universidad de Barcelona*, Barcelona, Spain

2010 (June), *Universidad Carlos III de Madrid*, Madrid, Spain

2010 (March), University of Southern California, California, USA

2009 (October), Columbia University, New York, USA

Carmen Sotomayor

Université Catholique de Louvain (UCL), *Groupe Interfacultair de Recherche sur les Systèmes d'Education et de Formation* (GIRSEF). Joint research work and publications in the teaching area with Vincent Dupriez. *Université Catholique de Louvain* (UCL), director of GIRSEF.

Faculty of Philosophy and Arts, and Faculty of Psychology and Educational Sciences. Collaborative work in the area of literacy with Silvia Lucchini. *Université Catholique de Louvain* (UCL), Project in preparation for submission to the French Community of Belgium.

Université du Québec à Montréal. *Chaire UNESCO de développement curriculaire* (CUDC). Collaborative work and joint publications in the area of teacher training and curricular reforms with Philippe Jonnaert, Director of the UNESCO Chair.

5. DISSEMINATION AND DISCLOSURE

a) Conferences and seminars

International

1. **Ahumada, Luis**. "Distributed Leadership and Constructing the Meaning of Education Reform". Paper presented at the 2010 Annual Meeting of the American Educational Research Association (AERA), Denver, April, 30– May, 4 (2010)
2. **Ahumada, Luis**. "Distributed leadership and organizational learning in Rural Public Chilean Schools". Conference at the Department of Education University of Wyoming, Laramie, February, 6, (2010).
3. **Ahumada, Luis**. "Distributed leadership and organizational learning in Public Chilean Schools". Conference at the Social Justice Research Center University of Wyoming, Laramie, February, 16, (2010)

4. **Ahumada, Luis; Montecinos, Carmen; Sisto, Vicente.** "Aseguramiento de la ciudad de la gestión escolar en Chile." XXXII Congreso Interamericano de Psicología. Guatemala, June 28- July 2 (2009)
5. **Ahumada, Luis; Sisto Vicente; López, Verónica.** "Liderazgo distribuido y aprendizaje organizacional en escuelas municipales chilenas". XXXII Congreso Interamericano de Psicología. Guatemala, June 28-July 2 (2009)
6. **Aguayo, Luis** "The importance of glycine receptor intracellular loop on pharmacological properties". Mini-symposium. Universiteit Hasselt. January 26-27, 2009.
7. **Aguayo, Luis** "Identification of Discrete Residues in the Intracellular Loop of LGICs for Actions of Ethanol and General Anesthetics", Professor of Physiology, University of Pittsburgh, USA, Tuesday, June 2, 2009.
8. **Araya, Roberto** "El juego en gran escala: Un fuerte estímulo para el mejoramiento del aprendizaje de la Matemática", Seminario de Evolución de los resultados de las escuelas de Nicaragua en el Serce. 19 de Mayo del 2010, Managua. Ministerio de Educación de Nicaragua y UNESCO.³
9. **Araya, Roberto** "Metáforas en el aprendizaje de las matemáticas", Seminario de Evolución de los resultados de las escuelas de Guatemala en el Serce. 8 de Julio del 2010, Guatemala. Ministerio de Educación de Guatemala, UNESCO y Plan.
10. **Araya, Roberto** "El uso de metáforas en matemáticas", presentación al Ministerio de Educación de El Salvador. 12 de Julio de 2010.
11. **Araya, Roberto** "El Juego en la enseñanza de las matemáticas", Conferencia a rectores de establecimientos educacionales organizada por Ministerio de Educación del territorio Atlántico, Barranquilla, Colombia.
12. **Araya, Roberto** "El uso de metáforas en matemáticas", presentación al Ministerio de Educación de Panamá. 19 de Julio de 2010.
13. **Araya, Roberto** "La enseñanza de la matemática: un enfoque lúdico", en Seminario de Evolución de los resultados de las escuelas de Costa Rica en el Serce. 24 de Julio de 2010, San José. Ministerio de Educación de Costa Rica y UNESCO.
14. **Araya, Roberto** "La Enseñanza de la Matemática y la Computación" Universidad de Ciencias Pedagógicas "Juan Marinello" Matanzas, Cuba. (2010)
15. **Assael, Jenny.** "Educación y Trabajo docente en el nuevo escenario latinoamericano, en Panel Especial: Las políticas de evaluación de los docentes." in VII Seminario de la Red Latinoamericana de Estudios sobre Trabajo Docente que se realizará en Lima, Perú, 4 y 6 de agosto, (2010)

³ Given the interest that arises in Latin America to support mathematics teaching, particularly through the use of metaphor strategies, UNESCO has invited the METAFORAS project, directed by Roberto Araya, to a number of activities to disseminate this project among Ministries of Education and school directors in several Latin American countries. This and the following five seminars listed fall under such activities.

16. **Assael, Jenny.** Presentación de ponencia en Congreso Internacional Presente y futuro de la profesión docente en Colombia en el Panel Temático: *La profesión docente: análisis de casos Latinoamericanos*. Bogotá, 4 al 6 de Noviembre (2009).
17. **Assael, Jenny.** Presentación de Ponencia en III Congreso Interamericano y XXIV Simposio Brasileño de Política y Administración de la Educación, "Derechos Humanos y Ciudadanía: desafíos para las políticas públicas y la gestión democrática de la educación" con el apoyo de numerosas organizaciones académicas nacionales e internacionales de educación y formación ciudadana, incluyendo la Representación de la UNESCO en Brasil, en Sesión Especial: Gestión escolar y calidad de enseñanza: políticas y prácticas. En Vitória, Espírito Santo, 12 al 14 de agosto (2009).
18. **Ávalos, Beatrice** (with Alejandro Sevilla). "Construcción de la Identidad Profesional en los Primeros Años de Docencia" II Congreso Internacional sobre Profesorado Principiante e Inserción Profesional. Ministerio de Educación Argentina, U. Buenos Aires y Organización de Estados Iberoamericanos, 22-26 Febrero (2010).
19. **Ávalos, Beatrice.** (with Danae de los Ríos) "Teacher identity construction in reform driven contexts: A Chilean study." XIV World Congress of Comparative Education Societies. Istanbul, Turkey, 14-18 June (2010).
20. **Ávalos, Beatrice.** Comments on the document "Employment and careers, teacher salaries, teaching and learning conditions" prepared for the X CEART Meeting (ILO/UNESCO Joint Committee of Experts on Recommendations Concerning Teaching Personnel) as a member of CEART. Paris, 28 September-2 October. (2009)
21. **Ávalos, Beatrice.** "How Teachers Live Their Profession and Respond to Demands: A Review of the Literature", 10th UKFIET International Conference on Education and Development: "Politics, Policies, Progress". 15 – 17th September (2009)
22. **Ávalos, Beatrice.** "Docentes y Políticas en la Región latinoamericana." Seminario Internacional: Efectividad del Desempeño Docente, PREAL en asociación con Secretaría de Educación Pública de México y Facultad de Ciencias Sociales (FLACSO-México). 8 – 9 octubre (2009) .
23. **González, Corina; López, Verónica,** (with Bravo González, P.). "Científicos jóvenes y sonrientes: la imagen de científico de los estudiantes chilenos de 11° y 12° grado en diferentes contextos escolares". VIII Congreso Internacional sobre Investigación en Didáctica de las Ciencias. Barcelona, Septiembre (2009)
24. **González, Corina; López, Verónica.** (with Bravo González, P., Martínez-Larraín, M) . "¿Qué está haciendo el científico?: análisis de la actividad científica descrita por alumnos secundarios Chilenos de 11. y 12. grado de distintos tipos de establecimientos educacionales" VIII Congreso Internacional sobre Investigación en Didáctica de las Ciencias. Barcelona, Septiembre (2009)
25. **González, Corina; López, Verónica.** (with Bravo González, P. Castillo Fierro, P.) "The image of scientists in Chilean 11th and 12th grade students from different educational contexts" ESERA 2009 CONFERENCE (European Science Education Research Association) . Istanbul, August (2009)

26. **González, Corina; López, Verónica.** (with Bravo González, P. Martínez-Larraín, M.) "What is the scientist doing? Analysis of the scientific activity described by Chilean 11th and 12th grade students from different types of schools". ESERA 2009 CONFERENCE (European Science Education Research Association). Istanbul, August (2009)
27. **González, Corina; López, Verónica** (with Gavilán, J.) "Validation of a Questionnaire for Assessing Secondary Students' Conceptions of Science and Learning Science" ESERA 2009 CONFERENCE (European Science Education Research Association). Istanbul, August (2009)
28. **López, Verónica.** "Peer victimization in the Chilean Context". Paper presented at the Annual Meeting of the American Educational Research Association (AERA). Denver, Co, 30 April - 04 May. Included in Paper Depository. (2010)
29. **López, Verónica,** (with Cáceres, P.) "Bullies, not victims? Multiple discriminant analysis of Chilean preadolescents". Paper presented at the Annual Meeting of the American Educational Research Association (AERA). Denver, Co, 30 April - 04 May. Included in Paper Depository. (2010).
30. **López, Verónica,** (with Madrid, R.) "Parent Participation in the Chilean School System: Consumers, Civilians, or Transformative Agents?" Roundtable discussion presented at the Annual Meeting of the American Educational Research Association (AERA). Denver, Co, 30 April - 04 May. Included in Paper Depository. (2010).
31. **López, Verónica.** (with Rodríguez, J. I. Bilbao, M. A.) "Peer victimization from a social perspective: The influence of classroom climate". Conference on Human Development, Nueva York, NY, 9-11 April. Included in CD. (2010).
32. **López, Verónica.** "Caracterización de conductas de intimidación y victimización en estudiantes chilenos". XXXII Congreso Interamericano de Psicología. Ciudad de Guatemala, June-July. Included in CD. (2009).
33. **Makovec, Mattia and Mizala, Alejandra** "Parental decisions in a choice based school system: Analyzing the transition between primary and secondary school" (with Andres Barrera) Presented at the International Workshop on Applied Economics of Education, Catanzaro, Italy, June 14-15, 2010.
34. **Makovec, Mattia and Mizala, Alejandra** "Parental decisions in a choice based school system: Analyzing the transition between primary and secondary school" (with Andres Barrera) Presented at EALE/SOLE (European Association of Labour Economists / Society of Labor Economists) Joint conference, University College London, London, June 17-19, 2010.
35. **Meyer, Eduardo.** "Avances sobre integración de las TIC's en USA" 2010 ISTE Conference.
36. **Lara, Bernardo, Mizala, Alejandra, Repetto, Andrea** "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Presented at the Society of Economic Dynamic Annual Meeting, Montreal, Canada, July 2010.

37. *Lara, Bernardo, Mizala, Alejandra, Repetto, Andrea* "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches" (with Bernardo Lara and Andrea Repetto). Presented at the Latin American and the Caribbean Economic Association LACEA Meetings, Buenos Aires, Argentina, October 1-3, 2009.
38. *Lara, Bernardo, Mizala, Alejandra, Repetto, Andrea* "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Presented at the Faculty of Economics, Universidad de Los Andes Colombia, September 14, 2009.
39. **Peña, M.** "Rhythmic scales of speech perception." *Brainclocks and rhythms: From Milliseconds to interval timing: Speech timing.* January 3-13, 2010. Santiago de Chile.
40. **Sánchez, J.** (with Tadres, A.) "Augmented reality application for the navigation of people who are blind." *Proceedings of the 8th International Conference Series on Disability, Virtual Reality and Associated Technologies, Viña del Mar, Chile, August 31-September 2, 2010*, pp. 51-60
41. **Sánchez, J.** (with Rodriguez, J.) "Videogame for improving orientation and mobility in blind children." *Proceedings of the 8th International Conference Series on Disability, Virtual Reality and Associated Technologies, Viña del Mar, Chile, August 31-September 2, 2010*, pp. 299-302
42. **Sánchez, J.** (with Mendoza, C.) "Gender and ICTs in Chilean Education", *World Conference on Educational Multimedia, Hypermedia & Telecommunications, ED-MEDIA 2010, Toronto Canada, June 29-July 2, 2010*, pp. 127-136
43. **Sánchez, J.** "Digital Inclusion in Chilean in Rural Schools", *9th ACM International Conference on Interaction Design and Children, Barcelona, España, June 9-12, 2010*, pp. 364-367
44. **Sánchez, J.** (with Espinoza, M.) "Video Game Design for Mobile Phones." *World Computer Congress 2010, Brisbane, Australia, September 20-23, 2010*, pp. 199-210
45. **Sánchez, J., Sáenz, M.** "Innovative Practices for Learning Human-Computer Interaction by Engineering Learners." *1st Annual Engineering Education Conference, IEEE EDUCON, Madrid, España, April 14-16, 2010*, pp. 1-6
46. **Sánchez, J., L. Guerrero, M. Sáenz** (with H. Flores): "A Model to Develop Videogames for Orientation and Mobility." *ICCHP Lecture Notes in Computer Science, LNCS (2) 2010: 296-303*
47. **Sánchez, J.** (with H. Flores) "Integration of Children with Visual Disabilities through Science Video Gaming." *25th Annual International Technology & Persons with Disabilities Conference, CSUN 2010, San Diego, CA, USA, March 22-27, 2010*, pp. 1-3
48. **Sánchez, J., Sáenz, M.** (with Pascual-Leone, A., Merabet, L.) "Navigation for the Blind through Audio-Based Virtual Environments." *ACM CHI 2010 We are HCI, Atlanta, GA, USA, 10-15 April 2010*, pp. 3409-3414

49. **Sánchez, J., Sáenz, M.** (with Pascual-Leone, A., Merabet, L.) "Enhancing Navigation Skills through Audio Gaming." ACM CHI 2010 We are HCI, Atlanta, GA, USA, 10-15 April 2010, pp. 3991-3996
50. Olivares, R., **Sánchez, J.** "Science Process Skills through Interactive Software in Middle School Chilean Learners." 2010 NARST Annual International Conference, Research into Practice: Practice Informing Research, Philadelphia, PA, March 20-24, 2010, p.1-5.
51. Salinas, A., **Sánchez, J.** "La superación de la brecha digital en las Escuelas Rurales." Actas XIV Taller Internacional de Software Educativo, TISE '09, pp. 157-164, Santiago de Chile, Diciembre 1, 2 y 3 de 2009.
52. **Sánchez, J., Guerrero, L., Sáenz, M. & Flores, H.** "Modelo de Desarrollo de Aplicaciones Móviles basadas en Videojuegos para la Navegación de Personas Ciegas." Actas XIV Taller Internacional de Software Educativo, TISE '09, pp. 177-187, Santiago de Chile, Diciembre 1, 2 y 3 de 2009
53. **Sánchez, J.** (with H. Flores) "Blind Children School Integration and Science Learning through Video Gaming." Interactive Technologies and Games: Education, Health and Disability, Nottingham, UK, October 27, 2009
54. **Sánchez, J.** (with H. Flores) "Videojuegos Colaborativos Móviles para Preescolares." XI International Symposium on Computers in Education, Coimbra, Portugal, November 18-20, 2009, pp. 1-6
55. **Sánchez, J.** (with Tadres, A., Pascual-Leone, A., Merabet, L.) "Navigation through auditory virtual environments for the rehabilitation of blind children." International Symposium on Neurorehabilitation, Valencia, España, October 15-16, 2009
56. **Sánchez, J.; Sáenz, M.; Ripoll, M.** "Usability of a Multimodal Videogame to Improve Navigation Skills for Blind Children." Proceedings of the Eleventh International ACM SIGACCESS Conference on Computers and Accessibility, Pittsburgh, PA, USA, October 26-28, 2009, pp. 35-42
57. **Sánchez, J.; Salinas, A.** (with Purcell, O., Pérez, L.) "Best pedagogical practices with ICT in Chilean classrooms." Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications ED-MEDIA 2009, June 22- 26, 2009, Honolulu, HI, USA, pp. 2031-2040
58. **Sánchez, J.** (with Tadres, A., Pascual-Leone, A., Merabet, L.) "Blind Children Navigation through Gaming and Associated Brain Plasticity." Proceedings of the IEEE Virtual Rehabilitation 2009 International Conference, June 29-July 2, 2009, Haifa, Israel, pp. 29-36
59. **Sáenz, M.; Sánchez, J.** "Indoor Position and Orientation for the Blind." In C. Stephanidis (Ed.): Universal Access in HCI, Part III, HCII 2009, LNCS 5616, pp. 236-245, 2009. © Springer-Verlag Berlin Heidelberg 2009

60. **Sánchez, J.** "Mobile Audio Navigation Interfaces for the Blind." In C. Stephanidis (Ed.): Universal Access in HCI, Part II, HCII 2009, LNCS 5615, pp. 402-411, 2009. © Springer-Verlag Berlin Heidelberg 2009.
61. **Sánchez, Jaime.** "Construyendo la Cognición del Ciego con Sonido." Invited Keynote Talk. XIV Taller Internacional de Software Educativo, TISE '09, Auditorium Telefónica CTC, Santiago de Chile, Diciembre 1, 2 y 3 de 2009
62. **Sánchez, Jaime.** "Buenas Prácticas pedagógicas con TICs." Invited Keynote Talk. XIV Taller Internacional de Software Educativo, TISE '09, Auditorium Telefónica CTC, Santiago de Chile, Diciembre 1, 2 y 3 de 2009
63. **Sánchez, Jaime.** "Technology and Senses." Invited Keynote Talk. Art Beyond Sight: Multimodal Approaches to Learning Conference, Organized by Art Education for the Blind & The Metropolitan Museum of Art. Location: The Metropolitan Museum of Art, New York City, USA , October 16-17, 2009, USA
64. Villane, J., **Sánchez, J.** "3D Virtual Environments for the Rehabilitation of the Blind." In C. Stephanidis (Ed.): Universal Access in HCI, Part III, HCII 2009, LNCS 5616, pp. 246-255, 2009. © Springer-Verlag Berlin Heidelberg 2009
65. **Sisto, Vicente.** "Políticas y Discursos del Nuevo Management Público en el Campo de la Educación en Chile: el Caso de los Docentes." Encuentro Investigación en Cambios en el Trabajo. Universitat Autònoma de Barcelona: Barcelona, Mayo (2009)
66. **Sisto, Vicente; Montecinos, Carmen; y Ahumada, Luis** (with Fardella, C.) "Identidades en Disputa: las Identidades Laborales Docentes en el Contexto de las Políticas Laborales Managerialistas en el Chile Actual". VI Congreso Latinoamericano de Sociología del Trabajo. México D.F.: 20 al 23 de abril de 2010.
67. **Sisto, Vicente; Ahumada, Luis; Montecinos, Carmen;** (with Fardella, C.): "New Public Management and Labor Policy for Chilean Teachers, the Identity Trouble". Panel *Education Reform in Chile: School Improvement or Entrenching Neo-liberal Policy?* Congreso AERA 2010, Denver. (2010)
68. **Sisto, Vicente;** (with Fardella, C.): "La Semiótica de la Cultura como Herramienta para el Análisis de la Implementación de las Políticas Públicas: El Caso de la Política de Evaluación e Incentivos al Desempeño Docente en Chile". X Congreso Mundial de Semiótica. La Coruña. 21/09/2009 al 26/09/2009. (2009)
69. **Sisto, Vicente; Ahumada, Luis; Montecinos, Carmen; Bellei, Cristián; Castro, Abelardo:** "Análisis Cualitativo de la Implementación de una Política Orientada al Desempeño Docente en Chile". XI Congreso de Metodología de Ciencias Sociales y de la Salud: Málaga. 16/09/2009 al 18/09/2009 (2009)
70. **Sisto, Vicente; Montecinos, Carmen; Ahumada, L.** (with Fardella, C.): "El Nuevo Management Público en la Educación en Chile: Un análisis desde las Políticas Laborales dirigidas a Docentes". XXVII Congreso Asociación Latinoamericana de Sociología. Buenos Aires. 31/08/2009 al 04/09/2009. (2009)

71. **Sisto, Vicente; Ahumada, Luis; Montecinos, Carmen** (with Fardella, C) : “Cambios en el Trabajo y Transformaciones Identitarias en el Chile Actual: El caso de los Docentes en el Contexto de las Políticas Laborales Managerialistas”. XXVII Congreso Asociación Latinoamericana de Sociología. Buenos Aires. 31/08/2009 al 04/09/2009. (2009):
72. **Sisto, Vicente; Ahumada, Luis; Montecinos, Carmen**. “Análisis de la Implementación a Nivel Local de la Política de Evaluación e Incentivos al Desempeño Docente”. XXXII Congreso Interamericano de Psicología: Ciudad de Guatemala. 28/06/2009 al 02/07/2009. (2009)
73. **Sisto, Vicente; Ahumada, Luis; Montecinos, Carmen;** (with Fardella, C.): “Identidades Laborales promovidas por las Políticas de Evaluación e Incentivo del Desempeño Docente”. Ponencia presentada en el XXXII Congreso Interamericano de Psicología: Ciudad de Guatemala. 28/06/2009 al 02/07/2009. (2009)
74. **Solar, María Inés**. “Factores que inciden en el logro académico de estudiantes universitarios de alta vulnerabilidad: Estudio de caso en las Universidades de Chile y Concepción”. Seminario Internacional de la Asociación Internacional de Formación de Profesores (ISFTE). Porto Alegre Brasil, 11 al 17 abril (2010).
75. **Sotomayor, Carmen**. Conference: “Formation des enseignants et réforme du curriculum au Chili” en: Colloque de la Chaire UNESCO de developpement curriculaire (CUDC) de la Université du Québec à Montréal: “Écoles en mouvement et réformes: tensions, défis et perspectives. États de lieux et questions curriculaires”. Canadá, 15 y 16 April (2010).
76. **Sotomayor, Carmen**. Conference: “Formation des enseignants et reforme curriculaire: création de standards disciplinaires et pédagogiques en langue maternelle”. En: XVI Congreso Mundial de Educación, Asociación Mundial de Ciencias de la Educación (AMCE-AMSE-WAER), Monterrey, 31 May-4 June (2010).
77. **Valenzuela, Juan Pablo**. “Main factors explaining the differences in results between Chile and OECD & Latin American countries in the PISA 2006 – Reading test” First Pisa Research Conference, organizado por OECD & Leibniz Institute for Science Education.. September, Kiel, Germany (2009)
78. **Valenzuela, Juan Pablo, Bellei Cristian** “Working conditions and teachers’ status in a market oriented educational system. The case of Chile” 10th UKFIET International Conference on Education and Development. September, Oxford, England. (2009)
79. **Valenzuela, Juan Pablo** “¿Qué explica las diferencias de resultados PISA Matemática entre Chile y algunos países de la OCDE y América Latina?” OEI y MINEDUC, Seminario Internacional PISA 2006 en la Región Iberoamericana y en Chile. September, Santiago, Chile (2009)
80. **Varas, María Leonor, Lacourly, Nancy**. “Teachers Mathematical Reasoning Does Matter” International Commission on Mathematical Instruction, ICMI STUDY 19, Proof and proving in mathematics education, in Taipei, Taiwan. 11-15 May 2009
81. **Villena, Benjamín**. “Estimating Direct Effects of Parental Time-Investment of Childres’s Cognitive and Non-cognitive Outcomes”. Conference organized by the

panel Study of Income Dynamics (PSID) CDS-III and TA New Results Workshop. U. de Michigan, USA. Junio (2010)

National

1. **Aguayo, Luis** "Identificación de nuevos sitios moleculares para la acción de drogas depresoras en el sistema nervioso central". Auditorio Marta Montory, Campus Las Tres Pascualas, Universidad San Sebastián (28 November 2009)
2. **Aguayo, Luis** "La sinapsis en el sistema Nervioso Central. Sitio de acción de fármacos y toxinas". Auditorio Dr. A. Lipschutz. Facultad de Cs. Biológicas. Universidad de Concepción (2 October 2009)
3. **Aguayo, Luis** "Identificación de sitios para las acciones de etanol y anestésicos generales en receptores inhibitorios" XXXI Congreso de la Sociedad de Farmacología de Chile, EmpreUdeC, Universidad de Concepción, Concepción (22-25 October 2009)
4. **Aguayo, Luis** "Simposio 4: Biomedicina: from the lab bench to the bedside," XXXI Congreso de la Sociedad de Farmacología de Chile, EmpreUdeC, Universidad de Concepción, Concepción, (22-25 October 2009)
5. **Aguayo, Luis** "Escritura de un manuscrito" Curso Método y escritura. Facultad de Medicina Universidad Católica Santísima Concepción, Sociedad Científica de Estudiantes de Medicina. (23 October 2009)
6. **Aguayo, Luis** "Neurociencia y apego seguro" Curso Actualización en Lactancia materna, Hospital Curanilahue (30 September and 1 October 2009)
7. **Ahumada, Luis; Sisto, Vicente; López, Verónica.** "Liderazgo distribuido y aprendizaje organizacional en el marco de la ley de subvención escolar preferencial." IX Jornadas Internacionales de Psicología Educacional. Valparaíso (November 2009)
8. **Ahumada, Luis; Sisto, Vicente; López, Verónica.** "Liderazgo distribuido y aprendizaje organizacional en el proceso de elaboración e implementación de Planes de Mejoramiento Educativo". IV Congreso Chileno de Psicología. Temuco (October 2009)
9. **Ávalos, Beatrice.** "La formación inicial docente en Chile", Seminario sobre Educación Pública CIAE-UNICEF. (25 August 2009)
10. **Ávalos, Beatrice.** "La formación docente inicial: Efectos sobre cambios en conocimientos de futuros profesores de Educación Básica con foco en Matemáticas" Encuentro Nacional e Internacional de Investigadores en Educación, ENIN. Santiago 3 (November 2009)
11. **Ávalos, Beatrice.** "Desarrollo de la investigación educativa". Presentación invitada, Facultad de Educación. Universidad de Concepción (18 January 2010)

12. **Bellei, Cristián.** "La ventaja académica de Cuba: ¿Por qué los estudiantes cubanos rinden más?" Presentación en el lanzamiento del libro de Martin Carnoy del Fondo de Cultura Económica; seminario del Centro de Estudios de Políticas y Prácticas en Educación, CEPPE, de la Pontificia Universidad Católica de Chile (22 June 2010).
13. **Bellei, Cristián** "Equidad Educativa: concepto y algunos vínculos con la cultura." Congreso Metropolitano de Ciencias Sociales, FACSO-FEN, Universidad de Chile, (October 2009).
14. **Donoso, Sebastián.** "Economía de la Educación superior en Chile, Fundamentos". Primer congreso de Educación Superior. (October 2009)
15. **González, Corina, López, Verónica** (with Bravo, P., Martínez-Larraín, M y Castillo, P.) "La imagen de científico de alumnos secundarios chilenos: resultados y consecuencias para la Enseñanza de las Ciencias a nivel primario y secundario" Primer Congreso Nacional y Latinoamericano de Profesoras y Profesores de Ciencias de Educación Básica. Santiago (14 and 15 October 2009)
16. **López, Verónica,** (with Ayala, A, Morales, M.) "Caracterización de Conductas de Intimidación y Victimización Escolar en Estudiantes Chilenos." IX Jornadas Internacionales de Psicología Educacional. Valparaíso, Noviembre. Incluido en CD. (2009)
17. **López, Verónica,** (with Ayala, A. Morales, M.) "El maltrato entre pares". Seminario "Violencia en el Espacio Escolar: Realidades y Perspectivas". Valparaíso (November 2009)
18. **Mizala, Alejandra** "Una Mirada a la Efectividad de los Profesores en Chile" (with Bernardo Lara y Andrea Repetto). Seminario Centro de Estudios Públicos (June 2010)
19. **Mizala, Alejandra** (with Bernardo Lara and Andrea Repetto). "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches" Chilean Economic Society Annual Meeting, Antofagasta (September 2009)
20. **Makovec, Mattia and Mizala, Alejandra** (with Andres Barrera) "Parental decisions in a choice based school system: Analyzing the transition between primary and secondary school" Presented at Banco Central de Chile: Workshop on Public Economics and Growth (May 2010)
21. **Mizala, Alejandra** (with Bernardo Lara and Andrea Repetto) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". ILADES-Georgetown University, Santiago (2009)
22. **Mizala, Alejandra** (with Bernardo Lara and Andrea Repetto) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Presented at the Center for Applied Economics, Santiago (2009)
23. **Mizala, Alejandra** (with Bernardo Lara and Andrea Repetto) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Presented at the Economics Department at University of Chile, Santiago (2009)

24. **Mizala, Alejandra** (with Bernardo Lara and Andrea Repetto) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Presented at the Center for Comparative Educational Policies, Universidad Diego Portales, Santiago (2009)
25. **Mizala, Alejandra** (with Bernardo Lara and Andrea Repetto) "The Effectiveness of Private Voucher Education: Evidence from Structural School Switches". Presented at the School of Government Universidad Adolfo Ibañez, Santiago (2009)
26. **Mizala, Alejandra**. "El Mercado Laboral Docente en Chile". Seminario OECD-Harvard University para líderes en reformas educativas. Módulo de profesionalismo Docente" Santiago (19 January 2010)
27. **Mizala, Alejandra**. "Análisis de la Prueba de Selección Universitaria" Academia Chilena de Ciencias, Santiago (23 September 2009)
28. **Mizala, Alejandra**. "Régimen Laboral, Remuneraciones e Incentivos y Formación y Capacitación Docente" Programa de Magister en Economía y Políticas Públicas Internacional, Universidad Adolfo Ibañez, Santiago (2 November 2009)
29. **Pardo, Marcela**. "Estado del arte de la educación inicial en Argentina, Brasil, Chile, Paraguay y Uruguay." Simposio Internacional Transición del niño hacia la socialización y la escuela. Organizado por OEA. Línea de investigación: investigación cualitativa. realizado en Valparaíso, Chile (27-29 May 2009)
30. **Sanchez, Jaime**. "Integración Curricular de TICs." Charla Invitada, Programa de Magister en Educación, Facultad de Humanidades, Departamento de Educación, Universidad de Santiago de Chile, Santiago (25 June 2010)
31. **Sanchez, Jaime** "¿Qué Aprenden los Aprendices con los Videojuegos?" Charla Invitada, XX Encuentro Nacional y VI Internacional de Investigadores en Educación (ENIN 2009), Centro de Perfeccionamiento, Experimentación e Investigaciones Pedagógicas (CPEIP) del Ministerio de Educación, CPEIP, Santiago, 4, 5 and 6 (November 2009)
32. **Sanchez, Jaime** "Enlaces al Futuro, Una Visión a 10 años." Charla Invitada, Reunión de la RATE- Enlaces, Red de Asistencia Técnica de Enlaces y el Centro de Educación y Tecnología, realizada en el CIE, Pontificia Universidad Católica de Chile, Santiago, 1 (October 2009)
33. **Sanchez, Jaime** "Videojuegos para el desarrollo de habilidades en ciencia a través de celulares, VIDHaC2." Charla Invitada, Programa Fondef TIC EDU, Hotel Crowne Plaza, Santiago (28 September 2009)
34. **Sisto, Vicente; Ahumada, Luis; Montecinos, Carmen**, (with Fardella, C.) "Construcciones de Identidad Laboral en Profesores del Sistema Municipal a partir de la Implementación de las Políticas de Evaluación e Incentivos al Desempeño Docente en Chile", Jornadas Internacionales "Trabajo Docente y Nuevas Identidades. Derecho a la Educación y Políticas Educativas en Latinoamérica". Santiago-Valparaíso-Viña del Mar. (7 - 11 June 2010)

35. **Sisto, Vicente** (with Martínez, D.; Silva, A.) Mesa Redonda: "Trabajo Docente en Latinoamérica como Desafío para las Ciencias Sociales". Organized by Universidad ARCIS, sede Concepción. Concepción (14 June 2010)
36. **Sotomayor, Carmen**. Conferencia: "Políticas de desarrollo profesional docente en Chile. Panorama y perspectivas" Seminario OCDE Ministerio Educación de México, CEPPE, PUC, (19 January 2010).
37. **Valenzuela, Juan Pablo**. "Causas que explican el mejoramiento de los resultados obtenidos por los estudiantes chilenos en PISA 2006 respecto a PISA 2000: Aprendizajes y Políticas", presented at the Facultad de Educación, Pontificia Universidad Católica de Chile, Santiago. (May 2010)
38. **Valenzuela, Juan Pablo**. Comentario al trabajo "Evolución de la matrícula en pedagogías y tipología instituciones" (L. Meckes y C. Cox), CEPPE Pontificia Universidad Católica de Chile, Santiago. (May 2010)
39. **Valenzuela, Juan Pablo, Pardo Marcela**. "Estudio de Contexto, Apreciación, Necesidades y Expectativas Educativas y Culturales en la Provincia de Arauco" Seminario 20 años de Fundación Educacional Arauco, Santiago. (January 2010)
40. **Valenzuela, Juan Pablo**. "La Agenda de Descentralización Chilena", en Seminario "Sentando más Actores a la Mesa. Nuevos Actores para la Descentralización, SUBDERE-Universidad de los Lagos, CEPAL. (January 2010)
41. **Valenzuela, Juan Pablo, Bellei, Cristián**. "Evolución de la Segregación de los Estudiantes Chilenos por Nivel Socioeconómico y su Relación con el Financiamiento Compartido". Facultad de Economía, Universidad Alberto Hurtado. Santiago. December (2009)
42. **Valenzuela, Juan Pablo**. "Causas que explican el mejoramiento de los resultados obtenidos por los estudiantes chilenos en PISA 2006 respecto a PISA 2000: Aprendizajes y Políticas". Seminario de Presentaciones Resultados Investigaciones FONIDE. MINEDUC Santiago. (November 2009)
43. **Valenzuela, Juan Pablo, Bellei, Cristián, Osses Alejandra, Sevilla, Alejandro**. "Principales factores que explican las diferencias de resultados en lectura y matemáticas en PISA 2006 entre Chile y otros países de OCDE y de América Latina", Facultad de Psicología-MIDEUC, Pontificia Universidad Católica de Chile. Santiago. (September 2009)
44. **Varas, María Leonor**. "Razonamiento Matemático y Calidad de la Instrucción Matemática". Segundo Congreso de Estudiantes de Pedagogía en Matemática de Chile, USACH, Santiago (26-28 August 2009)
45. **Varas, María Leonor**. Seminario Panel sobre Formación de Profesores de Matemática, Universidad Academia de Humanismo Cristiano (29 October 2009)

b) Conferences, Seminars, Round Tables and Book Launchings Organized by CIAE

1. Second CIAE-UNICEF Workshop

For the second year, CIAE organized Workshops on Educational Policy in association with UNICEF. The aim of these workshops is to bring together policy makers and researchers in discussions on the main policy issues facing the country. This year, on average, 80 researchers and policy makers participated in the workshop. The topics discussed were: (i) *Educación Pública: Definiciones y Estrategias de Fortalecimiento*, (ii) *Reforma Basada en Estándares y Nuevos Ciclos Escolares: ¿Avance hacia una Educación de Calidad para Todos?* (iii) *Formación Inicial Docente: ¿Vamos por el Camino Correcto?*, (iv) *Avances y Tareas Pendientes en la Nueva Institucionalidad de la Educación Chilena*, (v) *Selección de Alumnos: ¿Problema o Virtud de Nuestro Sistema Escolar?* (please see the Program of the Workshop in Appendix 1)

2. International Conference in Post-Secondary Education Financing

The CIAE in conjunction with *Comisión Ingres*a, an agency responsible for managing loans for post-secondary education students with endorsement from the State, organized the International Conference: “Student Funding Mechanisms for Post-Secondary Education. Analysis of National and International Experience”. This Conference featured speakers **Bruce Chapman**, Professor at the Australia National University and **Ross Finnie**, Professor at the University of Ottawa. Participants also included **Mario Marcel**, from the Inter-American Development Bank, **Jamil Salmi**, Tertiary Education Coordinator of the World Bank and Patricio Meller, an associate researcher at the CIAE. The Conference was inaugurated by the Minister of Finance and closed by the Minister of Education. Over 300 people attended, including policy makers, researchers, university authorities and general public. (please see the Conference Program in Appendix 1)

3. CIAE Seminars, July 2009 – July 2010

The CIAE organizes bi-monthly seminars where research associates and young researchers present the results of investigations and development projects (please see the list of seminars in Appendix I).

Also, once a year all CIAE associate researchers meet in a seminar to present and discuss the results of their research. In the first seminar, held on October 23rd at the *Pontificia Universidad Católica de Valparaíso*, 13 papers were presented.

4. Book Launching

Seminar to launch the Book “*Asistencia Educativa en Chile: ¿Aporte al mejoramiento escolar?*” (Educational assistance in Chile: Does it contribute to school scores?) Editorial Ocho libros, Santiago. Edited by **Cristián Bellei**, July 29, 2010. This seminar was attended by researchers and policy makers. Approximately 400 people attended, including policy makers, school principals, teachers, and researchers.

5. Round Table for Teachers

The CIAE organized in January 2010 the Roundtable: “Teachers for Chile. Policies and Proposals”, with the participation of researchers from *Universidad de Chile* and *Pontificia Universidad Católica de Chile*, and committee representatives of the two presidential

candidates who passed to the second round in the recent election. Speakers were **Beatrice Avalos**, CIAE researcher, Francisco Claro, Dean of the Faculty of Education, *P. Universidad Católica of Chile*; Carolina Tohá, campaign head of candidate Eduardo Frei, and Cristián Larroulet, committee head of the then candidate and current President, Sebastian Piñera. This Roundtable was organized in the context of the Summer School that *Universidad de Chile* organized for the country's teachers of school education. It took place in the Hall of Honor, *Universidad de Chile* Headquarters, on January 6, 2010. **Cristián Bellei and Carmen Sotomayor** were responsible for the organization, **Cristián Bellei** acted as chair. It was attended by 150 people, mostly teachers, but also policy makers, academics and researchers.

6. Teacher Training Seminar

The CIAE co-funded the Seminar: "Practical Training in the Learning to Teach Process" held at *Pontificia Universidad Católica de Valparaíso* (November 26-27, 2009) with the participation of three prominent international researchers in the area of teacher education: Dr. Marilyn Cochran-Smith, Dr. Lily Orland-Barak and Dr. Christine E. Sleeter. The Seminar was organized by CIAE associate researchers from *Universidad Católica de Valparaíso*.

7. Conference: Stories for Education in the Bicentennial (August-September 2010).

The Center for Advanced Research in Education (CIAE), *Universidad de Chile*, and the Center for Research on Education Policy and Practice (CEPPE) of *Pontificia Universidad Católica de Chile*, have organized a cycle of conferences on Education on the occasion of the country's Bicentennial.

This initiative is motivated by the need to contribute to the debate on education and to shift the focus of public conversation about schooling and teachers, supporting and enhancing the transcendental meaning of their work. These conferences are particularly but not exclusively, aimed at teachers. The conferences' program is shown below.

- Relatos de Identidad (Stories of Identity). Pedro Morandé, Sonia Montecino, Juan Asenjo (August 4, 2010).
- Relatos de Sentido (Stories of Meaning). Floridor Pérez, Claudio Di Girolamo, Antonio Bentué (August 11, 2010).
- Relatos de Acción (Stories of Action). Ricardo Lagos Escobar, Bruno Philippi (August 25, 2010).
- Relatos de Educación (Stories of Education). Victor Inzulza, Beatrice Avalos, Cristián Warnken (September 1, 2010).

8. First Inter-Disciplinary Conference on Research in Education (Santiago-Chile, September 30 - October 1, 2010)

This is another activity that is carried out jointly by the two education research centers established in 2008 at *Universidad de Chile* and *Pontificia Universidad Católica de Chile*, with their associate institutions *Universidad de Concepción*, *Universidad de la Frontera*, *Pontificia Universidad Católica de Valparaíso*, *Universidad Alberto Hurtado* and *Fundación Chile*. In the Bicentennial year, they have organized the First Inter-disciplinary Conference on Research in Education.

Within the context of the Conference, the II Conference on Research in Post-Secondary Education, co-organized with the Center for Compared Education Policies of *Universidad Diego Portales* will also be held.

The Conference topic is **Research for a Better Education in Chile's Bicentennial** and its purpose is to convoke the set of disciplines that currently have research relevant to education in Chile: education, psychology, sociology, economics, political science, history, basic science, engineering, medicine, and others. The research areas envisaged by the Conference include: educational policy, educational management, teaching and learning, teachers, ICTs and education, neuroscience and learning, history of education, and post-secondary education. The focus of work can be diverse: theoretical, empirical (quantitative or qualitative), methodological or historical, the main requirement being their academic rigor. For more information on these areas, visit www.cie2010.cl.

We believe that an inter-disciplinary and integrative view will allow a fruitful dialogue between researchers from different fields of knowledge. We aim to contribute to the better understanding of the complexities of the main challenges involved and to create rigorous and relevant knowledge to improve the quality and equity of education that Chile can offer to its children and youth.

A total of 300 papers were received from all over Chile, 72 of which were accepted for presentation in the Conference, on September 30 and October 1. This is a great convocation success, due to both the number and the quality of the papers selected by a Program Committee composed of 22 academics and researchers from around the country. Along with these 72 papers, the Conference contemplates plenary sessions with five international visitors in the areas in which both centers conduct research. Likewise, there will be a final panel with the participation of academics from the four countries that are celebrating their Bicentennial this year: Argentina, Colombia, Chile, and Mexico. The subject to be addressed is the vision about the evolution of educational research in their countries in the past two decades, and its impact both on public policies for the sector and on the players' practices, including a look on the subject into the future. To date, 800 people have registered to participate in the Conference.

9. *International Seminar on School Textbooks* (September 27-29, 2010)

The CIAE is organizing the International Seminar on Mathematics, Physics and Chemistry School Textbooks, in conjunction with the Center for Mathematical Modeling, commissioned by the Ministry of Education. This Seminar will include 17 international experts from 11 countries. There are 21 papers accepted from Chile, Brazil, Mexico, Colombia, Argentina, the USA, invited lectures and panels. The Seminar is aimed at the general public, including teachers of the school system.

c) Media Appearances: Newspapers, Magazines, Radio, Television

Some researchers write op-ed articles in national newspapers and many researchers are frequently interviewed about their opinions on different topics related with educational policies.

1. **Araya, Roberto.** "La Motivación y no la falta de talento aleja a las niñas de las matemáticas". *El Mercurio*, 01 de Febrero de 2010

2. **Araya, Roberto.** “Nota sobre Mundial Mágico”, TVN, El Mercurio, Sgabriel.cl, Pedagogía, Escuela de Verano, Colegio Tecnológico.cl, Emol Deportes, 20 de junio de 2010.
3. **Araya, Roberto.** “Nota sobre Mundial Mágico”, Fondef, Educación, EligeEducar, Mineduc, EducarChile.cl, 16 de junio de 2010
4. **Araya, Roberto.** “Nota sobre Mundial Mágico”, BioBio La Radio, TVN Noticiero Central, Chilevisión-Ultima Mirada,
5. **Araya, Roberto.** “Nota sobre Mundial Mágico”, Universidad de Chile, Tarde en Tarde, TVN, Chilevisión, Enlaces.cl, Icarito.cl, La Tercera, La Hora, 10 de junio de 2010
6. **Araya, Roberto.** “Nota sobre 2º Ensayo SM”. Publicada en: Publimetro, 08 de junio de 2010
7. **Araya, Roberto.** “Nota sobre 2º Ensayo SM”. Publicada en La Cuarta, 7 de junio de 2010
8. **Araya, Roberto.** “Nota sobre 2º Ensayo SM”. La Tercera, 02 de junio 2010
9. **Araya, Roberto.** “Nota sobre 2º Ensayo SM”. Publicada en El Mercurio, 31 de Mayo de 2010
10. **Araya, Roberto.** “Entrevistas sobre competencia Vectores”. Canal 13, Edición Central, 7 de Mayo de 2010
11. **Araya, Roberto.** “Entrevista sobre competencia Vectores”. Radio Agricultura, edición central, 6 de Mayo de 2010
12. **Araya, Roberto.** “Entrevista sobre 2º Ensayo Cuarto Torneo”. CNN Chile, 19 de Abril de 2010
13. **Araya, Roberto.** “Entrevista sobre 2º Ensayo Cuarto Torneo”. La Tercera.cl, La Tercera Educación, 17 de Abril de 2010
14. **Araya, Roberto.** “Nota sobre 2º Ensayo Cuarto Torneo”. El Mercurio.cl, El Mercurio, Educación, 11 de Abril de 2010
15. **Araya, Roberto.** “Nota sobre 2º Ensayo Cuarto Torneo”. La Tercera, 7 de Abril de 2010
16. **Ávalos, Beatrice.** “El 60% de futuros docentes no llega al nivel mínimo en prueba internacional de matemáticas”. La Tercera, 04 de Julio de 2010.
17. **Ávalos Beatrice, Bellei Cristián.** “Mundo académico resalta desigualdades educacionales y llama a priorizar apoyo a sectores vulnerables”. La Tercera, 06 de enero de 2010.

18. **Bellei, Cristián.** "MINEDUC buscará certificar calidad de agencias que asesoran a las escuelas más vulnerables" El Mercurio, 31 de julio 2010.
19. **Bellei, Cristián.** Columna, "Simce: los colores no son el problema. La Tercera, 04 de Julio de 2010.
20. **Bellei, Cristián.** Entrevista sobre el SIMCE, Canal de Televisión CNN Chile, 03 de junio de 2010
21. **Bellei, Cristián** Debate sobre la calidad de la educación: ¿Tropiezo u oportunidad? Revista Mensaje n°589, Junio 2010 (coautor: Juan Edo. García-Huidobro).
22. **Bellei, Cristián** Educación: ¿la definitiva "primera prioridad"? Revista Mensaje n°582, Septiembre 2009.
23. **Bellei, Cristián, Valenzuel, Juan Pablo;** (with Osses, Alejandra, Sevilla, Alejandro). "Chile subiría 31 puestos en lectura en PISA si mejorara la eficiencia en el uso de recursos". La Tercera 10 de Agosto de 2009
24. **CIAE.** Libro del CIAE revela la formación continua de profesores como tema pendiente. Universidad de Chile, 03/07/2009
25. **Dartnell, Pablo.** "Ingreso de Jóvenes Talentosos a las Universidades". TVN 24 horas noticiero central, 28 de noviembre de 2009
26. **Mizala, Alejandra. Columna** "El Simce, una vez más". La Segunda, jueves 10 de junio de 2010.
27. **Mizala, Alejandra. Columna** "Acceso a la información: haciendo que el mundo queme neuronas por Chile". La Tercera, viernes 9 de abril de 2010. (B. Villena)
28. **Mizala, Alejandra. Columna.** "Caminar y mascar chicle". La Segunda, martes 30 de marzo de 2010.
29. **Mizala, Alejandra. Columna.** "El paro docente: un juego de suma negativa". La Segunda, jueves 19 de noviembre de 2009.
30. **Mizala, Alejandra. Columna.** "Capital humano y financiamiento de Fondecyt". La Segunda, martes 15 de septiembre de 2009.
31. **Mizala, Alejandra. Columna.** "Todos los niños pueden aprender". La Segunda, miércoles 20 de mayo de 2009.
32. **Mizala, Alejandra. Columna.** "Carrera profesional docente". La Segunda, jueves 2 abril de 2009.
33. **Mizala, Alejandra.** "Investigación realizada por académicos de la U. de Chile y U. Adolfo Ibáñez: Experiencia, género y prácticas de los docentes inciden en resultado del Simce". El Mercurio, miércoles 16 de junio de 2010.

34. **Mizala, Alejandra.** "La transformación que necesita la enseñanza escolar: Mejorar la formación de los profesores y subir subvenciones". El Mercurio – Chile 2010-2020, martes 1 de junio de 2010.
35. **Mizala, Alejandra.** "Evaluación consideró los resultados del SIMCE y la condición de vulnerabilidad económica de los habitantes: Estudio identifica a las comunas de Santiago más eficiente en administrar sus colegios". El Mercurio, lunes 3 de mayo de 2010.
36. **Muñoz, Carlos.** "La conciencia cívica Escolar". (a propósito del Fondap Proyecto 11-2008) Diario de Concepción, anexo Diario La Tercera. 7 de Octubre, Pág. 4 2009
37. **Muñoz, Carlos.** "Futura generación de jóvenes mira con recelos a los partidos políticos". ". (a propósito del Fondap Proyecto 11-2008). Diario El Mercurio. 16 de noviembre, Pág. 13, 2009.
38. **Muñoz, Carlos.** "Formación ciudadana en los jóvenes". (a propósito del Fondap Proyecto 11-2008). Diario El Sur de Concepción. 24 de noviembre, Pág. 4, 2009.
39. **Pardo, Marcela.** "La Importancia de la Educación inicial: El proyecto educativo es clave para escoger un jardín infantil". El Mercurio, 05 de Julio de 2010.
40. **Sánchez Jaime** "58% de niños usa computador del colegio para entretenerse", Diario La Tercera, Chile, 04 de Julio de 2010
41. **Sánchez Jaime** "Niños y niñas escolares manifiestan igual acceso a las TIC", Sección Actualidad, del Departamento de Ciencias de la Computación, Universidad de Chile, 22 de Junio de 2010
42. **Sánchez Jaime** "Los teléfonos inteligentes entran poco a poco en la sala de clases", Diario El Mercurio, Chile, 28 de marzo de 2010
43. **Sánchez Jaime** "La tecnología se toma la vida cotidiana entre 2000 y 2009: Una Internet masificada y aparatos cada vez más inteligentes marcaron esta década", Diario El Mercurio, Chile, 31 de Diciembre de 2009
44. **Sánchez Jaime** "Este proyecto cambiará la dinámica de los profesores en la enseñanza de ciencias", Sección Actualidad, del Departamento de Ciencias de la Computación, Universidad de Chile, 22 de Octubre de 2009
45. **Sánchez Jaime** "Videojuegos especiales ayudan a los ciegos a aprender a desplazarse", Diario El Mercurio, Chile, 13 de Octubre de 2009
46. **Sánchez Jaime** "Presentan proyectos ganadores de concurso TIC-EDU de Fondef", Diario La Tercera, Chile, 29 de Septiembre de 2009
47. **Sánchez Jaime** "Virtual reality used for blind", Marshall's News, USA, September 21, 2009
48. **Sánchez Jaime** "Tribute: Game Design Pioneer and Father of Sci-Fi Gets Google Doodled", Game Culture News, USA, September 21, 2009

49. **Sánchez Jaime** "Virtual reality used for blind to map real world", ECentury Holdings, USA, September 18, 2009
50. **Sánchez Jaime** "Virtual reality used for blind to map real world", Reuters, USA, September 17, 2009
51. **Sánchez Jaime** "VR game helps the blind", News24, USA, September 17, 2009
52. **Sánchez Jaime** "Desarrollo en el país: Crece el software educativo chileno", Diario El Mercurio, Chile, 11 de Septiembre de 2009
53. **Sánchez Jaime** "Sanarse jugando", Diario La Nación, Chile, 1 de Septiembre de 2009
54. **Sotomayor, Carmen**. "Menos del 4% de las pedagogías ha sido rechazada en la acreditación obligatoria". La Tercera, 09 de Mayo de 2010
55. **Sotomayor, Carmen and Valenzuela, Juan Pablo** "Docentes Titulados llegan a su máximo histórico: más de diez mil en 2008". La Tercera, 12 de Abril de 2010
56. **Sotomayor Carmen**. Entrevista Núcleo Milenio "La Profesión docente en Chile", Radio Universidad de Chile, 5 de abril de 2010
57. **Sotomayor, Carmen**. "Simce: sólo 24% de alumnos logra los objetivos mínimos de cuarto básico en escritura". Columna La Tercera, 07 de noviembre de 2009
58. **Sotomayor, Carmen**. "40% de los profesores egresa de planteles sin acreditación". La Tercera 21 de julio de 2009
59. **Valenzuela, Juan Pablo**. "Profesores chilenos tienen escasa confianza en el futuro de sus alumnos" (entrevista y síntesis de uno de los resultados del trabajo con Fundación Arauco). La Tercera, 26 de junio de 2010
60. **Valenzuela, Juan Pablo**. "En 50% aumentará a partir de septiembre la subvención para alumnos vulnerables". La Tercera, 22 de Mayo de 2010
61. **Valenzuela, Juan Pablo**. "Docentes ganan 45% menos que el promedio de profesionales" (sobre trabajo realizado sobre el tema (with A. Sevilla, C. Bellei, D. de los Ríos), La Tercera, 16 de Mayo de 2010
62. **Valenzuela, Juan Pablo**. "Los factores que sí pesan en la calidad al elegir colegio". La Tercera, 28 de Marzo de 2010.
63. **Valenzuela, Juan Pablo**. "Ranking de colegios PSU 2009". La Tercera. La Tercera, 30 de Diciembre de 2009
64. **Valenzuela, Juan Pablo**. "Los colegios con más alumnos que superan los 600 puntos en la PSU". La Tercera, 27 de Diciembre de 2009

65. **Valenzuela, Juan Pablo** con **Bellei, Cristián**, Sevilla Alejandro, Osses Alejandra. "Rendimiento de alumnos de altos recursos explica mejora de Chile en Pisa." La Tercera 07 de Diciembre de 2009
66. **Valenzuela, Juan Pablo**. "El milagro polaco: cómo el país mejoró su educación en seis años". La Tercera, 28 de septiembre de 2010
67. **Varas, María Leonor, Felmer, Patricio**. "Los cambios que vienen en la formación de docentes de básica". La Tercera 05 de Octubre de 2009
68. **Varas, María Leonor**. "Profesores chilenos reprobados". Revista Paula, 04 de Mayo de 2010
69. **Varas, María Leonor**. Programa Milenio, Radio Universidad de Chile, 05 de junio de 2010
70. **Varas, María Leonor**. "Alumnos chilenos de pedagogía salen mal evaluados en matemática en prueba mundial". El Mercurio, 14 de abril de 2010

6. TRANSFER AND LINKAGES

The Center has had high impact thanks to links with policy makers, the school system, schools, students and teachers, as well as with teacher training institutions.

a) Organization of a Mathematics Tournament for Students

Within the framework of the FONDEF project, D06I-1031 'Strategies and Tools for the Teaching of Mathematics based on Metaphors' (**Araya, Roberto and Dartnell, Pablo**) two additional **mathematics tournaments** have been organized during CIAE's second year of operation. The aim of the tournaments is to motivate students through games using metaphors, which are used later for role playing and learning. This methodology will serve to assess pupils' curricular knowledge as included in the school curriculum framework; pupil performance in mathematical reasoning; and his or her creativity in resolving problems. The first tournament took place on November 28, 2008 with 600 primary school pupils from third to sixth grade from 13 schools; the second on April 24, 2009 with 3,000 third- to eighth graders from 148 schools. Different regions were represented in both tournaments.

The third National Tournament of Online Games took place on October 23, 2009; it involved freshmen and sophomore pupils in Secondary education, as well as primary school pupils from third to eighth grade; 6,000 students and 202 schools participated. The fourth tournament will take place in the next months; 6,600 students from 295 schools already have signed in to participate in the tournament. Thus, around 15,000 students will have participated in these tournaments.

The first analyses of these tournaments are included in the article "Estimation of Students' Playing Strategies in a Massive Statistics Tournament" presented at the conference MATECOMPU 2009 "The Teaching of Mathematics and Computer Science" held at *Universidad de Ciencias Pedagógicas "Juan Marinello"*, in Matanzas, Cuba.

Other research centers are also exploring the possibility to conduct tournaments; for example, the Institute for Advanced Research in Human Sciences and Technology (HSTAR) from Stanford University. Its Director, Keth Devlin, has started research into the potential of massively multiplayer games available commercially to support the teaching of mathematics. In October this year HSTAR will hold a workshop on massively multi-user games to support learning in mathematics. Roberto Araya has been invited to the workshop to show the experience of the METAFORAS project and to share with other researchers of the Institute and other universities his own experiences with these types of games. Another center with developments in massively multiplayer games is NASA, which through the NASA Learning Technologies Project, is developing Moonbase Alpha, a massively multiplayer online game scheduled to be released into the educational system in early 2010.

b) Explora Program

The CIAE also works with schools through the project *Diseño de una Propuesta Metodológica de tus Competencias en Ciencias para Primer Ciclo Básico* (Design of a Methodological Proposal of Your Skills in Science for the First Elementary School Cycle), carried out for the Explora Program of CONICYT. It consists in extracurricular (after school) science workshops for first- to eighth- graders in elementary education. To date we have conducted 21 activities that were tested with eight teachers and a total of nearly 200 students from three schools.

c) Work with Math Teachers

The FONDEF project “Strategies and tools for teaching mathematics based on metaphors” (under Roberto Araya and Pablo Dartnell) has trained more than 300 teachers from all over the country on the use of metaphors for teaching math, with follow-up on implementation twice a semester. In this work there are three other universities involved: *Universidad Santo Tomás* in Arica, *Universidad Bernardo O’Higgins* and *Universidad Adventista de Chile*.

d) Workshop with Teachers

The project Millennium Nucleus: “The teaching profession in Chile: policies, practices and projections” that is part of the teaching line of the CIAE, held a workshop with 70 teachers from the Pedagogical Movement of the Teachers’ Guild Association, last July 23rd. In this workshop, Beatrice Avalos and Juan Pablo Valenzuela presented the first results of the survey conducted on a nationally representative sample of 1,929 practicing teachers. Such results were discussed, commented and interpreted by teachers, which was highly valued by the Teachers’ Association and the research team. At the same time, this activity involved interviews with teaching staff and researchers of Nucleus about the results of the survey, which will be broadcast on four radio programs that reach different regions of the country.

e) School Textbooks

On behalf of the Chilean Ministry of Education, the Center has participated in the evaluation of Math and Science textbooks offered by different publishers. This yearly process, carried out by a group of experts, is part of the selection the Ministry has to do in

order to buy and distribute appropriate textbooks to public schoolers. This year, as was mentioned before, the Center is organizing an International seminar on textbooks.

f) ICTs and Education

Through its Cognition, Information Technology and the Brain area, in collaboration with C5, the Center has been linked with the Center for Education and Technology through the *Enlaces* Network and the increased efforts of the Ministry of Education to maintain a high and significant level of incorporation and integration of ICTs in schools.

This past year we have been working directly with the Ministry of Education, schools and secondary education establishments in the country in the following projects:

- Mobile Computer Labs, where we designed, implemented, systematized and transferred a strategy for teachers to develop and diversify their teaching practices based on specific methodologies and mobile technology.
- Guides, where we designed and implemented a mobile system using cell phones to support learning by secondary school students through learning guides, concepts and exercises for the PSU (University Selection Test).

The research group on Cognition, Information Technology and the Brain has had an impact on different schools of our country, generating constant work in the Metropolitan Region, at Santa Lucía and Helen Keller schools for the blind, in the Region of Valparaíso, at the Instituto Antonio Vicente Mosquete, and in the Region of Bío-Bío, at the corporation for the visually-impaired *Corporación de Ayuda al Limitado Visual*. In all these schools and centers, educators use videogames produced by C5 to generate an impact on learning and on the development of orientation and mobility skills in blind children.

Moreover, our group has been constantly working in municipal schools in our country, seeking solutions and integrating information and communication technologies in a dedicated manner and with strong methodological support.

g) Creation of Web Sites for Teachers and Students

Five different web sites have been created for Center projects; www.metaforas.cl, www.amathis.cl, www.registroate.cl, www.asistenciatecnicaeducativa.cl, and www.c5.cl/ticedu/

- According to Google analysts, the web site www.metaforas.cl had 63,267 visits during 2009 with an average of 3 minutes per visit, 51.4% are new visits. This site has materials for teachers (documents, lectures' videos, didactic games, directions for evaluations) and primary and secondary students.
- <http://www.amathis.cl/> has information about videogames in educational context, mainly for mathematical teaching and learning. This site is oriented towards teachers and students.
- www.registroate.cl. This is the official web site of the National Registration of Educational Technical Assistance of the Ministry of Education. This site is oriented towards universities, foundations, academic centers, enterprises and people that provide technical assistance to schools.
- www.asistenciatecnicaeducativa.cl. This is the official web site of the Ministry of Education through which managers of public and private schools and school principals

obtain information about the supply of the technical assistance, which is available in the National Register of Educational Technical Assistance. In this web site users can evaluate the quality of the technical assistance providers; the evaluations are published in this web site and the Ministry used them to monitor the performance of the providers.

- www.c5.cl/ticedu/ web site related with the project VIDHaC2 video games for the development of scientific abilities on the cell phone (**Jaime Sánchez**)

h) CIAE Research Projects that Directly Interact with the School System

Some of the research projects funded by the Center (PIA-CONICYT CIE-05, see Appendix 3) involve direct work with school principals and teachers. Six examples are shown below.

- Distributed leadership and organizational learning in schools; exchange of successful practices at the district level. Luis Ahumada, Verónica López, Vicente Sisto (PUCV), Juan Pablo Valenzuela (UCh).
- Cognitive strategies for mental calculation. Part 1 and 2. Jorge Soto, Lino Cubillos, Grecia Gálvez, Eric Tanter (UCh), Arturo Mena (PUCV), Diego Cosmelli (PUC)
- Evaluation and incentive policies for teacher development: subjective and social dimensions in school management, principals and teachers. Vicente Sisto, Luis Ahumada, Carmen Montecinos (PUCV) Cristián Bellei (UCh), Abelardo Castro (UDEEC).
- Teachers' professional models in dispute. Meanings, transformations and resistance in the context of decentralized local practices within public education providers. Vicente Sisto, Luis Ahumada, Carmen Montecinos (PUCV), Jenny Assael, (UCh).
- Pedagogical knowledge and its impact on the teaching of statistics in 4th and 7th grade of primary education. Raimundo Olfos (PUCV)
- Knowledge management in schools of high vulnerability: The role of the school principal. Jorge Ulloa, Jorge Dresdner, Oscar Nail (UDEEC).

i) Presentations to members of the Chilean Parliament (on request):

- Valenzuela, Juan Pablo. Education Commission of the Senate of the Republic, Bill on the Strengthening of Public Education. January (2010)

j) Collaboration with Decision-Making Institutions, Municipalities and Teachers' Associations

- Collaboration with the Undersecretariat of Regional Development, Ministry of the Interior of Chile (SUBDERE), in the development of research on the cultural identity of the Province of Arauco.
- Collaboration with the Association of Municipal Corporations of Chile.
- Collaboration with the Teachers' Union.

k) Dissemination Seminars to Policy-Makers, School Principals, Teachers and Students

1. **Ávalos, Beatrice.** Participated in the panel organized by the Ministry of Education: Formación Docente Inicial. Santiago (6 October 2009)

2. **Ávalos, Beatrice.** Presented at the panel organized by MECESUP (MINEDUC) on Formación Docente Inicial. Santiago, (26 October 2009)
3. **Bellei, Cristián.** "Asistencia Técnica Educativa ¿aporte al mejoramiento escolar?" In Expobásica, Ministerio de Educación (7 October de 2009).
4. **Bellei, Cristián** "Investigación Educacional en la Universidad de Chile: el CIAE." Seminario del Centro de Estudios de la Federación de Estudiantes de la Universidad de Chile, Facultad de Derecho de la Universidad de Chile (3 September 2009).
5. **Bellei, Cristián** "Educación pública: definición, prioridad y fortalecimiento." Jornada nacional sobre desmunicipalización y defensa de la Educación Pública, Colegio de Profesores de Chile (13 August 2009).
6. **Bellei, Cristián** (with Víctor Pérez) "Conocer más para vivir mejor. Educación y conocimiento en Chile en la perspectiva del Bicentenario." Seminario "El Bicentenario de Chile. Balance y perspectivas", Fundación Democracia y Desarrollo (6 August 2009).
7. **Valenzuela, Juan Pablo.** "La Educación Pública en la Coyuntura Actual", en Seminario del Colegio de Profesores, Santiago. (May 2010)
8. **Valenzuela, Juan Pablo.** "Comentarios sobre acciones recientes del gobierno central sobre el Sistema Escolar Chileno", seminario de Projectamérica, Santiago. (June 2010)
9. **Valenzuela, Juan Pablo.** "Desafíos para fortalecer la educación pública en Chile: Elementos para una reforma", Congreso de la Asociación de Corporaciones de Educación y Salud Municipal, Viña del Mar. (June 2010)
10. **Sisto, Vicente.** (with Martínez, D.; Silva, A.): Mesa Redonda y Taller de Trabajo: "Trabajo Docente en Situaciones de Catástrofe". Organizado por el Colegio de Profesores de Concepción. Concepción (15 June 2010)
11. **Sotomayor, Carmen.** Conferencia: "Estándares disciplinarios y pedagógicos para la formación de profesores de educación básica (1º-6º). Lenguaje y Comunicación". In: Jornadas CPEIP, Ministerio de Educación sobre la formación inicial docente (17 June 2010)
12. **Ulloa, Jorge.** Seminar for Principals and Management Teams of Municipal and Subsidized Private Establishments. Held in November 2009. Attendance: 220 executives, conducted in the Conference Hall of Club de Campo Bellavista. Results were delivered of the investigation: Knowledge Management at vulnerable educational institutions (November 28 and 29)
13. **Ulloa, Jorge.** Provincial Seminary, Challenges of SEP (Preferential School Subsidy) Law. Organized by ASCUDE, Association of Municipal School Principals, held in the resort El Morro in Tomé. Attendance: 120 people. Preliminary results of the investigation were delivered. (August 2009)

Council of Representatives of Institutions Relevant to the Chilean Educational System.

CIAE has a Council with the mission of providing guidance about topics and issues of interest to the educational sector and to support transfer and diffusion activities. The council meets once a year. The latest meeting was held on January 11, 2010. Its members are:

- Rector of the Universidad de Chile.
- Rector of the Pontifical Catholic Universidad de Valparaíso.
- Rector of the University of Concepción.
- President of the Chilean Academy of Sciences.
- Coordinator of the Education Commission at the Chilean Association of Municipalities.
- President of the Association of Private Schools.
- President of the Teachers Union.
- Prefect of the Valparaíso Region.
- Prefect of the Bío Bío Region.

VII. LESSONS LEARNED

One element that we have considered interesting to explore is the creation of advanced investigation nuclei in education in the associated universities, in order to strengthen the work in each of the universities that make up the CIAE and so, incidentally, reduce the transaction costs involved in networking without organized nuclei in all three universities (to date there is a nuclei at the University of Chile). Each of the nodes would focus on those areas of research where CIAE has more interest and strength, carrying out research and development projects. Nodes may conduct projects separately or enhancing cross-university cooperation. This also involves institutional strengthening of education research at the three universities.

Another element which we have been reflecting on is post-graduate education. To date, associate researchers of the CIAE have been supporting various Master's programs of the three universities, both teaching courses and directing dissertations on subjects related to the Center's research. This experience has been very positive and many students of such Master's programs have joined the CIAE as young researchers. However, we believe that a logical projection of CIAE's activities and an additional way to contribute to the development of educational research in the country is to create a Master of Science Degree in Educational Research. This would be a program focused on developing the research capacity from inter-disciplinary perspectives. Through this Master's program, the CIAE could train new researchers with the necessary knowledge base about education and ways to investigate the relevant topics, which would enable them to contribute to the development of research and teaching at the institutions to which they belong. This is a task we have proposed ourselves to develop in the coming years.

VIII. APPENDICES

APPENDIX 1 – SEMINARS, CONFERENCES AND WORKSHOPS

A. WORKSHOP CIAE-UNICEF

Tuesday, August 25

Public Education: Definitions and Reinforcement Strategies.

Fernando Atria: What Education is 'Public'?

Harald Beyer: Increasing Public Education Effectiveness (co-author: Carolina Velasco)

Discussants: Pilar Romaguera and Carlos Montes

Thursday, September 24

Standards-Based Reform and New School Cycles: Advancing towards Quality Education for All?

Viola Espínola: The National System for Quality Assurance: A Standards-Based Reform (co-author: Juan Pablo Claro)

Jaqueline Gysling: Changing the Structure of the Schooling System (co-author: Denise Hott)

Discussants: Ernesto Schiefelbein and Juan Casassus

Monday, October 5

Initial Teacher Formation: Are We on the Right Track?

Beatrice Ávalos: Initial Teacher Formation in Chile: Quality and Policies

Jorge Manzi: Program INICIA: Fundamentals and Early Steps

Discussants: Ernesto Treviño and Luz María Budge

Tuesday, October 27

Progress Made and Pending Tasks in the New Institutionality of Chilean Education

Pablo Ruiz-Tagle: The Educational System's Regulation

Discussants: Cristián Bellei and Jesús Redondo

Thursday, November 5

Student Selection: A Problem or a Virtue of our Schooling System?

Paula Mena: Guardians and Student Selection Policies: Liberty, Equality, Competition and Fear (co-author: Francisca Corbalán)

Daniel Contreras: Student Selection and the Right to Education

Discussants: Pedro Montt and Ricardo Paredes

**B. INTERNATIONAL CONFERENCE
MECHANISMS TO FINANCE POST-SECONDARY EDUCATION
ANALYSIS OF DOMESTIC AND INTERNATIONAL EXPERIENCES**

The Sheraton Hotel (Pedro de Valdivia Lounge). Avda. Santa María 1742.

Santiago, November 24, 2009

Organizers: Center for Advanced Research in Education, *Universidad de Chile* and Commission for the Administration of the Credit System for Post-Secondary Education Studies (*Comisión Ingresa*)

Participants: Authorities of post-secondary education institutions, financial sector staff, education specialists, and policy makers.

Agenda

9:00 – 9:15 Welcome

Alejandra Contreras, Executive director, *Comisión Ingresa*.

Rafael Correa, Director, Center for Advanced Research in Education, *Universidad de Chile*.

9:15 – 9:45 Keynote Speech

Andrés Velasco, Finance Minister.

9:45 – 10:45 Profitability of University and Technical Careers

Chair: **Alejandra Mizala**, CEA and Center for Advanced Research in Education, *Universidad de Chile*.

Speaker (30 min.): **Patricio Meller**, CEA and Center for Advanced Research in Education, *Universidad de Chile*.

“Rates of Return and NPV of University and Technical Careers”

Open discussion: (30 min.)

10:45 – 11:00 Coffee break

11:00 – 13:00 Models of Public-Private Financing

Chair: **Jaime Alcalde**, member of *Comisión Ingresa*.

Speaker (30 min.): **Alejandra Contreras**, Executive Director, *Comisión Ingresa*.

“Collaboration between Public and Private Sectors. The Case of Students’ Loans with State Guarantee”

Speaker (30 min.): **Bruce Chapman**, Australian National University

“Comparative Analysis of Bank-type and Income Contingent Student Loans: Policy Lessons from International Experience.”

Speaker (30 min.): **Ross Finnie**, University of Ottawa.

“Who Goes, Who Stays, What Matters: Accessing and Persisting in Post-Secondary Education in Canada.”

Open discussion: (30 min.)

13:00 – 14:30 Lunch

14:30 – 16:00 An International View on Post-Secondary Education Financing

Chair: **José Joaquín Brunner**, *Universidad Diego Portales*

Speaker (30 min.): **Mario Marcel**, Inter-American Development Bank, IADB

“Credit for Post-Secondary Education and Financial Democratization”

Speaker (30 min.): **Jamil Salmi**, Tertiary Education Coordinator, The World Bank
“Students’ Loans in Developing Economies: Lessons and Prospects”
Open discussion: (30 min.)

16:00 – 16.15 **Coffee break**

16:15 – 17:45 **Private Mechanisms for the Financing of Post-Secondary Education**

Chair: **Alejandro Alarcón**, President, Association of Banks and Financial Institutions.

Speaker (20 min.): **Guy Ellena**, Director, Department of Health & Education, IFC, The World Bank

“Collaborative Model for the Financing of Post-Secondary Education, IFC-BCI-DUOC”

Speaker (20 min.): **Francisco Sardón de Taboada**, CEO, *Banco del Desarrollo*.

“The Experience of *Banco del Desarrollo* in the Financing of Post-Secondary Education”

Speaker (20 min.): **Pablo Lama**, Marketing Director, Santander Universities and Institutions. *Banco Santander*

“The Experience of *Banco Santander* in the Financing of Post-Secondary Education”

Open discussion: (30 min.)

17:45 **Closing remarks: Mónica Jimenez, Minister of Education.**

C. CIAE INTERNAL SEMINARS

July 2009 – July 2010

1. **09 /07 /2009: Marcela Pardo**
"Criterios para evaluar la calidad de una investigación cualitativa"
Investigadora CIAE.
2. **23/07/2009: Valentina Abufhele** (with Juan Pablo Valenzuela)
"Estándares e Indicadores de Desempeño de Sostenedores en el Sistema Educacional Público Chileno"
Investigadora joven CIAE
3. **06/08/2009: Tatiana Cisternas**
"La investigación en Formación Docente realizada en Chile: Revisión de Enfoques y Metodologías".
Estudiante de doctorado de la P. Universidad Católica y colaboradora del área docentes del CIAE
4. **20/08/2009: Alejandra Mizala** (with Bernardo Lara and Andrea Repetto)
"Revisiting the school choice debate in Chile".
Alejandra, directora académica del CIAE.
5. **03/09/2009: Beatrice Avalos**
"El Proyecto IEA TEDS_M de formación docente inicial".
Investigadora CIAE
6. **24/09/2009: Pablo Dartnell** (with Roberto Araya and David Gómez, tesista CIAE)
"Memoria y Aprendizaje: Algunos resultados provenientes del Modelamiento Matemático".
Investigador CIAE
7. **08/10/2009: Roberto Araya**
"Aprendizaje y Descubrimiento. ¿Qué revela la mirada?".
Investigador CIAE
8. **22/10/2009: Rodrigo Cornejo** (with Jenny Assael, Marcela Quiñones, Jesús Redondo and Karina Rojas)
"Bienestar/malestar docente y condiciones de trabajo en profesores/as de enseñanza media de Santiago".
Investigador Departamento de Psicología, Universidad de Chile.
9. **26/11/2010: María Isabel Font**
"La percepción de los estudiantes sobre la instrucción y el conflicto cognitivo en la enseñanza de la biología: construcción de instrumentos"
Candidata a doctor en Educación, Katholieke Universiteit Leuven, Bélgica.
10. **17/12/2009: Cristián Bellei**
"Condiciones de trabajo y status de los profesores en un sistema escolar orientado por el mercado"
C. Bellei y J.P.Valenzuela, investigadores CIAE.

11. 18/03/2010: Alejandra Osses

"¿Por qué Chile mejoró sustantivamente en PISA y SIMCE muestra un estancamiento? Estudio Exploratorio".

Investigadora joven del CIAE

12. 25/03/2010: Jorge Chávez

"La construcción colaborativa del conocimiento en entornos digitales basados en la comunicación asíncrona escrita: modalidades y distribución de la ayuda educativa a partir del diseño de perfiles individuales e indicadores grupales de participación y conectividad".

Estudiante de doctorado en Psicología de la Educación en la Universidad de Barcelona.

13. 08/04/2010: Diego Fuenzalida,

"Estudio de casos de buenas prácticas en la implementación del Programa de Educación Intercultural Bilingüe-Orígenes".

Antropólogo, miembro del equipo que evaluó el Programa de Educación Intercultural Bilingüe-Orígenes del Ministerio de Educación.

14. 22/04/2010: Patricio Rodríguez

"Un modelo para el diseño, implementación y evaluación de programas educativos apoyados por TICs".

Candidato a doctor de Ciencias de la computación de la P. Universidad Católica de Chile.

15. 06/05/2010: Sr. Abelino Jiménez

"Torneo de Matemáticas On Line: ¿Qué aprenden los alumnos y qué aprendemos nosotros? "

Estudiante de ingeniería matemática de la Universidad de Chile.

16. 27/05/2010: Carolina Holtheuer,

"Estudio del lenguaje genérico en niños preescolares chilenos".

PhD en lingüística por la Australian National University, y post-doctorada del CIAE

17. 17/06/2010: Ana Rojas,

"¿Logran las escuelas vulnerables instalar procesos de mejoramiento al implementar asistencia técnica educativa?. Evaluación de impacto".

Magíster en sociología de la Facultad de Ciencias Sociales de la Universidad de Chile

18. 01/07/2010: Juan Pablo Valenzuela.

"Causas que explican el mejoramiento de los resultados obtenidos por los estudiantes chilenos en PISA 2006 respecto a PISA 2000: Aprendizajes y Políticas"

APPENDIX 2 – ASSOCIATE RESEARCHERS ADDITIONAL ACTIVITIES

Ávalos, Beatrice. Member of the ILO/UNESCO Committee of Experts on the Recommendations concerning the Teaching Profession.

Ávalos, Beatrice. Member of the International Advisory Board for EdQual (DFiD and University of Bristol)

Ávalos, Beatrice. Member of International Writing Committees for *Teaching and Teacher Education*, *International Journal for Educational Development*, *Perspectives in Education*, *Open Education Journal*.

Ávalos, Beatrice. Member of the board of the Interdisciplinary Program of Educational Research.

Castro, Abelardo, Dean of School of Education, Universidad de Concepción.

Castro, Abelardo, President of the Schools of Education Association.

Mizala, Alejandra. President of First Inter-Disciplinary Congress for Educational Research to be held in Santiago-Chile, September 30- October 1.

Mizala, Alejandra. Member of the Science Council of FONDECYT-CONICYT (Chilean National Science Foundation) (2009).

Mizala, Alejandra. Member of the Advisory Board for the Human Development Report, United Nations Development Program (UNDP).

Peña, Marcela Co-organizer of the Conference “Brainclocks and rhythms: From Milliseconds to interval timing: Speech timing.” January 3-13, 2010. Santiago de Chile. Max Planck Institute.

Sisto, Vicente. Coordinator of Psycho-Social Support Task for Teachers and Schools in Disaster Areas (regions VI and VIII). At the request of the Teachers Guild Educational Movement. School of Psychology, *Pontificia Universidad Católica de Valparaíso*.

Sisto, Vicente. Co-Organizer of International Journeys “Educational Work and New Identities. The Right to Education and Educational Policies in Latin America.” Santiago-Valparaíso-Viña del Mar. June 7 – 11, 2010.

Sisto, Vicente. Creation of Research Network in Educational Work in Chile (*Red ESTRADO-Chile*) as part of *RED ESTRADO* (Latin American Research Network in Educational Work), an organization sponsored by the Latin American Council of Social Sciences (CLACSO).

Sánchez, Jaime. Director, FONDECYT-CONICYT Educational Research Group.

Sánchez, Jaime. Member of the Virtual Formation Technical Board, National Accreditation Commission, National System for Post-Secondary Education Quality Assurance.

Sánchez, Jaime. Director for *Universidad de Chile* of the Network *Enlaces* (Links) of the Ministry of Education.

Soto-Andrade, Jorge. Member of the Panel of Experts, SIMCE elementary school quality measuring system, 2010.

Soto-Andrade, Jorge. Member of the Scientific Committee, Doctorate Program in Math Teaching, *Pontificia Universidad Católica de Valparaíso*, 2010.

Soto-Andrade, Jorge. Member of the Advisory Committee for the MECSUP project for the design of competence-based curricular programs for the careers of Mathematics and Science Teaching, School of Science and School of Philosophy and Human Studies, *Universidad de Chile*, 2010.

Varas, María Leonor. Organizer of International Seminar on School Texts in Mathematics, Physics, and Chemistry to be held on September 27-29, 2010 in Santiago.

Varas, María Leonor. Member of EXPLORA-CONICYT Management Committee. 2009-2010.

APPENDIX 3 – RESEARCH PROJECTS

A. FUNDED BY PIA-CONICYT CIE-05

October 2008 – December 2009

1. Recent advances in theoretical modeling of the education market and secondary effects of educational interventions. Dante Contreras, Aldo González (UCh), Diana Krueger (PUCV).
2. School choice, educational quality and performance in the labor market. Alejandra Mizala, Mattia Makovec (UCh).
3. Evaluation of supply-side public financial instruments for post-secondary education. Carlos Cáceres, Osvaldo Larrañaga (UCh), Atilio Bustos (PUCV).
4. Knowledge strategies in highly vulnerable educational institutions. Jorge Ulloa, Jorge Dresdner, Oscar Nail (UDEEC).
5. Distributed leadership and organizational learning in schools; exchange of successful practices at the district level. Luis Ahumada, Verónica López, Vicente Sisto (PUCV), Juan Pablo Valenzuela (UCh).
6. Professional knowledge of future teachers. Beatrice Ávalos, Marcela Pardo (UCh).
7. Evaluation and incentive policies for teacher development: subjective and social dimensions in school management, principals and teachers. Vicente Sisto, Luis Ahumada, Carmen Montecinos (PUCV) Cristian Bellei (UCh), Abelardo Castro (UDEEC).
8. A comparative study of secondary students' scientific knowledge and conceptions about the nature and learning of the sciences exposed to innovative and traditional instructional methods. Corina González, Verónica López, Juan Gavilán (PUCV).
9. Understanding written texts; the relationship between early education, teaching practices and teacher learning in Elementary Education. Carmen Sotomayor, Carmen Julia Coloma (UCh), Romualdo Ibáñez, Giovanni Parodi (PUCV).
10. Cognitive strategies for mental calculation. Jorge Soto, Lino Cubillos, Grecia Gálvez, Eric Tanter (UCh), Arturo Mena (PUCV), Diego Cosmelli (PUC).
11. Student civic education at the end of the second cycle of Basic Education; ten years since the international civic education study. Carlos Muñoz, Leonora Reyes, Nelson Vásquez (UDEEC).
12. The origins of the difficulties in learning fractions: a scientific perspective. Pablo Dartnell, Roberto Araya, Marcela Peña (UCh), César Flores, Gamal Cerda (UDEEC).
13. The effect of item characteristics on the mathematics equity of the PSU test. Nancy Lacourly, Leonor Varas (UCh).
14. Measuring teacher knowledge for the learning of elementary school mathematics. Leonor Varas, Nancy Lacourly (UCh), Andrés Ortiz (UDEEC), Alejandro López.
15. Integration of ICT and learning styles and teaching. Eduardo Meyer, David Contreras (UCV), Nibaldo Gatica, Miguel Ripoll, Jorge Valdivia (UDEEC), Jaime Sánchez; Álvaro Salinas (UCh).
16. Mobility and orientation through videogames for learning, MOVA. Jaime Sánchez, Mauricio Sáenz, Luis Guerrero (UCh), José Miguel Garrido (PUCV), Miguel Ripoll (UDEEC).

January 2010 – March 2011

1. Academic achievement of university students from highly vulnerable backgrounds. María Inés Solar, María Elena Acuña, Lucía Domínguez (UDEC).
2. How children learn; symbolic learning in preschool children. Marcela Peña, Andrea Slachevsky, Ennio Vivaldi (UCh), Luis Aguayo (UDEC).
3. Typology of Community Systems of Public Education. Background for the new architecture of subnational educational systems. Sebastián Donoso, Giselle Davis, Víctor Cancino, Moyra Castro. Universidad de Talca.
4. Teachers' transition toward a critical-scientific awareness of the teaching profession. Abelardo Castro, Luis Ajagán, Marcela Gaete (UDEC) Carmen Montecinos (PUCV), Lino Cubillos (UCh)
5. Validating the content of pre-selected items as a tool for evaluating the development of children 0-6 years old, with a focus on their ethnic ascendancy. Marcela Pardo (UCh), Marta Edwards (CEDEP)
6. Knowledge from experience at the service of initial teacher formation made explicit: Converging professionalization processes. Beatrice Avalos, Mauricio Núñez, Ana Arévalo (UCh).
7. Distributed leadership and creation of professional networks in Educational Establishments: exchange of successful practices at the community and cross-community level. Luis Ahumada, Verónica López (PUCV), Juan Pablo Valenzuela (UCh)
8. Characteristics of written production in elementary education: Analysis of tests answered by students in 3rd, 5th, 6th, 7th and 8th grade in urban and rural municipal schools. Carmen Sotomayor (UCh), María Graciela Lucchini, Percy Bedwell
9. History, geography and social sciences classes as spaces for civility formation. The reality in junior high school. Carlos Muñoz, Nelson Vásquez, Leonora Reyes (UDEC).
10. Cognitive strategies for mental calculation, part 2. Jorge Soto, Lino Cubillos, Grecia Gálvez, Eric Tanter (UCh), Arturo Mena (PUCV), Diego Cosmelli (PUC)
11. University drop-out in Chile: The case of universities in the Board of Rectors. Alejandra Mizala, Mattia Makovec (UCh).
12. Pedagogic knowledge of contents and incidence on the teaching of statistics to 4th- to 7th- graders. Raimundo Olfo (PUCV)
13. Knowledge management in highly vulnerable educational institutions. Practical direction. Jorge Ulloa, Jorge Dresdner, Oscar Nail (UDEC).
14. Blind apprentice navigation via videogames, NACVI. Jaime Sánchez, Mauricio Sáenz (UCh), José Miguel Garrido (PUCV).
15. Digital natives and actual apprentices. Contrasting theory with reality. Eduardo Meyer, David Contreras (UCV), Jorge Valdivia (UDEC), Jaime Sánchez (UCh) Claudia Mendoza.
16. Implicit theories underlying the science-related concepts (scientific and science learning among secondary students: approaching analysis from the levels of scientific competence and gender differences. Corina González, Verónica López, Juan Gavilán, Carmen Núñez (PUCV).
17. Initial formation of elementary school teachers in the area of language and communication: toward a discipline formation profile. Carmen Sotomayor, Carmen Julia Coloma (UCh), Romualdo Ibáñez, Giovanni Parodi (PUCV).

18. Enforcing the Law of Preferential School Subsidies in vulnerable emerging municipal schools in the Metropolitan Region. Case studies. Jenny Assael, Jesús Redondo (UCh), Vicente Sisto (PUCV)
19. Estimating Direct Effects of Parental Time-Investment on Cognitive and Children's Cognitive and Non-cognitive Outcomes. Benjamín Villena (UCh), Cecilia Rios
20. Conceptions of Educational Players about School Integration and Inclusion, and their implications on school and pedagogic practices. Verónica López, María V. Pérez (PUCV)
21. Models of Educational Professionalism in Dispute. Meanings, transformations and resistances within the context of local practices applied by providers of private education to municipalities. Vicente Sisto, Luis Ahumada, Carmen Montecinos (PUCV), Jenny Assael, (UCh).
22. Why do we succeed in achieving our objectives? The disorders in planning, and sensitivity to rewards among teenagers and adults with attention-deficit/hyperactivity disorders as determinants of accomplishments. Andrea Slachevsky, Marcela Peña (UCh).

B. RESEARCH PROJECTS FINANCED BY OTHER SOURCES

1. "The teaching profession in Chile; policies, practices and projections." Ávalos, Beatrice (PI), Sotomayor, C.; Bellei, C.; Valenzuela, J.P., Marcela Pardo Project Núcleos, Iniciativa Científica Milenio, 2008-2010.
2. "Development of an evaluation instrument to assess child development between 0 and 6 years'. Marta Edwards (PI), Marcela Pardo, Nancy Lacourly, Marcela Peña, (with Teresa Segure, Ximena Seguel, Patricia Zañartu, Tomás Santibáñez, Nicole Eisenberg, María Isabel Lira, Isabel Margarita Haeussler). FONDEF D0711029, 2008-2011
3. "Videogames for skill development in science using cell phones." VIDHAC2: Jaime Sánchez (PI), Álvaro Salinas, Mauricio Sáenz, Héctor Flores, Mauricio Zúñiga. FONDEF TIC-EDU TE0811004, 2008-2010.
4. "Developing math comprehension and performance by solving open-end problems" Varas, María Leonor (PI Chilean part). AKA 09 Cooperation Chile-Finland, 2010-2012.
5. "Incentives, Reputation and Teacher Quality." Mizala, Alejandra (PI) Figueroa, Nicolás and Valdés, Gonzalo (co-PI). FONDECYT 1100308, 2010-2013
6. "Games based on hearing and touching (hepatics) for mobility and orientation' JAHMO": Sánchez, Jaime (PI) FONDECYT N° 1090352, 2009-2011
7. "Study of the development of language and symbolic thought of children who are and are not at cognitive risk." Peña, Marcela (Co-PI), FONDECYT N° 1090662, 2009-2011
8. "Identities in dispute: Constructions of working identity in teachers of the municipal system based on the implementation of evaluation policies and incentives to educational performance in Chile." Sisto, Vicente (PI), Montecinos, Carmen, Ahumada, Luis (co-PI)). FONDECYT 1090739, 2009-2011.
9. "Factors affecting the acquisition and development of pedagogical mathematical of Chilean teachers." Varas, Maria Leonor (PI), Lacourly, Nancy (Co-PI). FONDECYT 1090292, 2009- 2011.
10. "Towards the implementation of scientific research as a teaching approach in secondary education: development and evaluation of a teacher training proposal

- based on the principles of effective professional development” González-Weil, Corina FONDECYT- Iniciación N° 11080267, 2008-2011.
11. “Market Mechanisms, Private Participants, and Policy Making in Latin America” Mizala, Alejandra (Co-PI) (with Ben Schneider, Political Science Department, MIT) Tinker Foundation, 2009-2010.
 12. “Causes explaining the improvement in results obtained by Chilean students in PISA 2006 compared to PISA 2000”: Valenzuela, Juan Pablo (PI) with Bellei, Cristián, Sevilla, Alejandro, Osses, Alejandra and Telias, Amanda. FONIDE 2008-2009.
 13. “What education should be provided by the State and how should it be distributed? Contradictions between the policy design of the educational system and the right to quality education: Analysis of the Chilean case.” Donoso, Sebastián (PI). CLACSO- Asdi Scholarship 2009/ Higher-level researchers, area of Right to Education, Public Policies and Citizenship (2009-2010)
 14. “Student retention and success in post-secondary education: analysis of good practice.” Donoso, Sebastián (PI). Project of the Senior Board of Education. (2009-2010)

C. APPLIED PROJECTS DIRECTLY RELATED WITH THE EDUCATIONAL SYSTEM

These projects are directly related to the educational system: Ministry of Education, schools, principals, teachers and students.

1. Araya, Robert, and Dartnell, Pablo. FONDEF project D06I1023, Metaphors, works with five partner schools and two private universities. Two additional private universities have been added this year.
2. Bellei Cristián, and Valenzuela, Juan Pablo. Project FONDEF: Design of SIRMEC within the framework of the Law of Preferential School Subsidy: FONDEF-CONICYT, 2008- 2010
3. González, Corina. State of the art and professional development needs in secondary education, science subsector. Ministry of Education, (with Gómez, Melanie, Trujillo, Carmen, Cortez, Mónica, Bravo, Paulina, Abarca, Alejandro). August – December 2009.
4. Pardo, Marcela. Study on the implementation of PEIB-origins in schools focalized by the Bilingual Intercultural Education Program – Origins (PEIB-Orígenes) March-December 2009.
5. Sotomayor, Carmen. Standards for the training of primary and secondary education teachers to teach language & communication. 2009-2010
6. Valenzuela, Juan Pablo. Model for certification of technical educational assistance to individual consultants under the SEP Law (in collaboration with Fundación Chile). Ministry of Education. 2008-2010.
7. Valenzuela, Juan Pablo. Implementation of Educational Planning System, Maipú Educational Corporation (project CIAE-CMM). Maipú Educational Corporation, 2009- 2010. (with Amaya, Jorge, CMM).
8. Valenzuela, Juan Pablo. Performance standards for Chilean public providers of education. Ministry of Education. 2009-2010
9. Valenzuela, Juan Pablo, and Pardo, Marcela. Evaluation study of Intercultural Bilingual Education Program. Ministry of Education. 2009- 2010

10. Varas, María Leonor. Standards for the training of primary and secondary education teachers to teach mathematics. CPEIP, Ministry of Education, 2008-2009. Teaching-Learning area.