CENTER FOR ADVANCED RESEARCH IN EDUCATION

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FIRST YEAR ACTIVITY REPORT

CENTER FOR ADVANCED RESEARCH IN EDUCATION

(JULY 2008 - JULY 2009)

Universidad de Chile

UNIVERSIDAD DE CONCEPCIÓN

Center for Advanced Research in Education
First Year Report
(July 2008-July 2009)

I. EXECUTIVE SUMMARY

The Centre for Advanced Research in Education seeks to strengthen the contribution and impact of the University of Chile, the Pontifical Catholic (PC) University of Valparaiso and the University of Concepcion to 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 multidisciplinary, promotes excellence and engages 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 strengthen 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 academic, social actors 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: Educational Policies, Teachers; Teaching and Learning; Cognitive Sciences and Neuroscience applied to education; and Learning, Cognition, Information Technologies and the Brain. All five areas are involved in basic and applied research as well as development and outreach activities. These areas collaborate among each other according to the research fields and specific projects being developed.

The specific objectives are;
- To generate knowledge and collaboration so that educational policies and programs, and their management, are increasingly based on scientific evidence
- To generate knowledge about the main factors that influence the quality of teachers, both their initial and continuing professional development as well as 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.

Today the Center for Advanced Research in Education (CIAE) is undertaking 18 research projects funded through the Associate Research Program of the Chilean National Science and Technology Council, (CONICYT) with over 50 researchers

participating from six Schools of the University of Chile, together with those of the PC University of Valparaiso and the University of Concepcion[1]. In addition, there has been an emphasis on applying to competitive research funds offered by various programs. Thus, the researchers of the Center have been awarded grants from the Fund for Scientific and Technological Research (FONDECYT) for six research projects; 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 for six research and development projects (FONDEF); funding for two projects from the Ministry of Education's National Fund for Research and Educational Development (FONIDE) and grants for three other projects 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. Moreover, the Center is developing other projects with a regional focus requested by the Undersecretary of Regional Development and with private foundations (for details see this report). From the beginning the emphasis has been on innovative projects that have relevant research content.

Products of the Center's First Year of Operation

Publications
- Journals indexed by ISI
  - 15 articles accepted
  - 10 articles submitted
- 10 articles published in other international journals
- 31 full-length papers in International Conference Proceedings
- 4 articles published in national journals
- 3 edited books
- 30 book chapters

Dissertations and Theses
- Doctoral dissertations and Master's theses
  - 3 completed Doctoral dissertations
  - 7 Doctoral dissertations in progress
  - 10 completed Masters' theses
  - 6 Masters' theses in progress

- Undergraduate theses
  - 13 completed theses
  - 13 theses in progress

Participation in seminars and conferences
- 22 presentation in international conferences
- 36 presentation in national conferences
- 14 dissemination presentations

Courses
- 19 courses given

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[1] Researchers from the Center for Studies in Development and Psychosocial Stimulation (CEDEP) and the Institute for Research and Educational Development of the University of Talca also participate.

Organization of Seminars and Conferences
- 13 internal seminars
- 1 international conference

Foreign visitors
- 23 foreign visitors

Five web sites have been developed as a result of research projects
www.registroate.cl,
www.asistenciatecnicaeducativa.cl,
www.metaforas.cl,
www.amathis.cl,
www.nucleomilenio.cl

- 7 Op-ed articles in national newspapers

The Center was awarded a US$1.2m 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 education.

A **laboratory for cognitive neurosciences** has been built. The laboratory is located in the first floor (170 m^2) of a University of Chile property, close to that occupied by the Center. The laboratory has acquired equipment for a cost of around US$200,000 (a 64 channel high density electroencephalogram) EGI-300; equipment for following binocular eye movements Topbii-120; six experimental computers for the behaviour conduct evaluations; and three high speed computers for exhaustive mathematical computations to analyze signals and generate simulations). This laboratory permits the simultaneous evaluation and integral analysis of brain activity, behavioural and neuro-physiological conduct that is displayed during successful and unsuccessful learning situations.

Within the framework of the FONDEF project, D06I-1031 'Strategies and Tools for the Teaching of Mathematics based on Metaphors' two **mathematics tournaments** have been organized. The aim of the tournaments is to motivate students by games using metaphors, which are used later for representation and learning. This methodology allows the evaluation of students' knowledge of the school curriculum; the student's output and performance in terms of mathematical reasoning; and his or her creativity in resolving problems. The first tournament took place on November 28, 2008 with 500 primary school pupils from third to sixth grade; and the second on April 24, 2009 with 3,500 primary school students from third to eighth grade. Different regions were represented in both tournaments. The third National Tournament of Online Games will take place on October 23, 2009 and will involve pupils from first and second year of Secondary education, as well as primary school pupils from third to eighth grades.

Lastly it is important to point out that in December 2008 the International Scientific Committee carried out its first evaluation of the Center. The evaluation committee was made up of high level international experts - John Bruer, J. S. McDonnell Foundation;

Jere Behrman, University of Pennsylvania; Jack Mehler, School of Advanced Studies, Trieste; Alvaro Pascual Leone, Harvard University and Lily Orland-Barak, University of Haifa.

II. KEY DEVELOPMENTS

- The establishment of a research team, working from different distinct disciplinary perspectives.

- The development of 18 research projects within the framework of the Center's five research areas. These projects involve researchers from the three universities and are multidisciplinary in nature. The output of these projects will be presented at an internal seminar on October 16, 2009 at the P.C University of Valparaiso. The list of projects can be found in the annex of this report.

- The implementation of the cognitive neurosciences laboratory of 170 m^2. The laboratory has the following equipment for a cost of more than $100 million pesos.
  a. A high-density electroencephalogram (64 channels) EGI-300 that calibrates the electrical activity of the brain with a strong temporal resolution. It includes amplifiers, three computers and accessories necessary for evaluation, from the new born to adults.
  b. Binocular Tobii-120 that registers visual behavior with great temporal resolution.
  c. Six experimental computers for the behavioral evaluation booths together with audiphones, microphones, speakers, dimmers etc.
  d. Three high-speed computers for exhaustive mathematical calculations with reference to signaling and the generation of simulations.
  e. Accessories; equipment needed for the attendance of the public and small children.

- A grant from the James S. McDonnell Foundation of US$1.2m for 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 will take place in San Pedro de Atacama, Chile, March 15-26, 2010, organized by the Center and the McDonnell Foundation. The call for applications can be found in the appendix of this report and is available on the Center's web page. Thirty researchers have been confirmed and around 60 mainly pre and post doctorate students from different parts of the world will participate.

- Collaboration with the Ministry of Education in the design of a public policy to strengthen Chilean public education.

- The development of a competitive academic group that have been able to obtain different grants for research projects from the country's principal research and development funds - FONDEF, Scientific Millennium Initiative, FONIDE-Ministry of Education and FONDECYT. This academic group has also developed relevant

projects for the Ministry of Education and other important institutions in the public educational sector. The principal projects are listed below:

Research projects funded by other sources

- Scientific Millennium Initiative, 2008-2010
  Research Nucleus: "The teaching profession in Chile; policies, practices and projections': Beatrice Ávalos, Carmen Sotomayor, Cristián Bellei, Juan Pablo Valenzuela, Marcela Pardo, Danae De Los Ríos, Alejandro Sevilla and Paula Cavada. (www.nucleomilenio.cl).

- FONDEF D06I1038, 2008-2010.
  (www.registroate.cl, www.asistenciatecnicaeducativa.cl)
  "Development of a system to register, monitor, evaluate and certify educational technical assistance services for schools: Cristián Bellei, Juan Pablo Valenzuela, Carmen Sotomayor, Alejandra Osses, Dante Cajales (with Dagmar Raczynski).

- FONDEF D05I10211, 2007-2009
  "Tools for the training of mathematics' teachers": Patricio Felmer, María Leonor Varas, Jorge Soto

- FONDEF D06I1023, 2007-2009. (www.metaforas.cl)
  "Strategies and tools for teaching mathematics based on metaphors": Roberto Araya, Pablo Dartnell

- FONDEF D05I10308, 2007-2009 (www.amathis.cl)
  "Educational videogames": Pablo Dartnell

- FONDEF D07I1029, 2008-2011.
  "Development of an evaluation instrument to assess child development between 0 and 6 years'. Marta Edwards, Marcela Pardo, Nancy Lacourly, Marcela Peña, (with Teresa Segure, Ximena Seguel, Patricia Zañartu, Tomás Santibáñez, Nicole Eisenberg, María Isabel Lira, Isabel Margarita Haeussler).

- FONDEF TIC-EDU TE08I1004, 2008-2010.
  "Videogames for skill development in science using cell phones",VIDHAC2: Jaime Sánchez, Álvaro Salinas, Mauricio Sáenz, Héctor Flores, Mauricio Zúñiga.

- FONDECYT 106076.
  "Linguistic skills of babies under one year old; comparison of premature babies with low birth weight and those carried to term": Enrica Pittaluga, Patricia Fernández.

- FONDECYT 1060778.
  'Study of the effects of the intentional development of symbolic gestures of breast fed babies'. Chamarrita Farkas and Marcela Peña (Co-PI).

- FONDECYT N° 1090662, 2009-2011
  "Study of the development of language and symbolic thought of children which are and are not at cognitive risk'. Marcela Peña (Co-PI)

- FONDECYT N°1070316, 2007-2009
  "The importance of a teacher in the classroom; the effects of the presence of teachers and their characteristics on student performance": Alejandra Mizala Co-PI (with Andrea Repetto)

- FONDECYT N° 1090352, 2009-2011
  "Games based on hearing and touch (hepatics) for mobility and orientation' JAHMO": Jaime Sánchez

- FONDECYT 1090292, 2009-2011
  "Factors affecting the acquisition and development of pedagogical mathematical of Chilean teachers": María Leonor Varas

- FONIDE 10837, 2008-2009.
  "Factors affecting the development and sustainability of innovative methods for integrating information communication technologies' (ITC) in the classrooms of secondary school teachers': Álvaro Salinas, Jaime Sánchez, (with Orietta Purcell)

- FONIDE 2008-2009
  "Causes that explain the improvement of results obtained by Chilean students in PISA 2006 compared to PISA 2000": Cristián Bellei and Juan Pablo Valenzuela with Alejandro Sevilla, Alejandra Osses and Amanda Telias.

- CONSEJO SUPERIOR DE EDUCACIÓN (2008)
  "Opportunities offered by Teacher Education programs for future basic teachers to acquire pedagogic mathematics knowledge": Leonor Varas and Patricio Felmer (with collaboration of staff from Ministry of Education, PC University of Chile, University of Concepcion, the Metropolitan University of the Sciences of Education and the University Cardenal Silva Henríquez)

- SOCIAL SCIENCE RESEARCH COUNCIL (2008-2009)
  "Improving learning environments in schools" Comparative School Discipline Project: Alejandra Mizala (with **Florencia Torche de New York University EE.UU.)**

- TINKER FOUNDATION (2009-2010)
  "Market Mechanisms, Private Participants, and Policy Making in Latin America". Alejandra Mizala (with **Ben Schneider de MIT, Massachusetts Institute of Technology EE.UU**.)

- JAMES S. MCDONNELL FOUNDATION # 220020187.01 (2009-2012)
  Annual Summer School in Cognitive Science, Neuroscience and Education. Marcela Peña

External Projects
MINISTRY OF EDUCATION

- "Analysis and revision of the Chilean results for PISA 2006; Chilean National Report", (Project: Principal factors that explain the 2006 PISA results in mathematics and language: Chile, OECD countries and Latin America): Cristián Bellei, Juan Pablo Valenzuela with Alejandro Sevilla, Alejandra Osses and Amanda Telias.
- IEA TEDS-M (Teacher Education Development Study-Mathematics) (2007-2009. "National study of the preparation of Basic School Future Teachers in mathematics': Beatrice Avalos (with Francisco Tellez)
- "Development of an analytic framework and data collection instruments for the Longitudinal Pupil Study" (in collaboration with the United Nations Development Program (UNDP) in agreement with the Ministry of Education): Cristián Bellei
- "Development of content and pedagogic standards primary level teacher in language, communications and mathematics": Patricio Felmer, Leonor Varas, Pablo Dartnell, Roberto Araya, Carmen Sotomayor, with Arturo Mena, Nina Crespo and Giovanni Parodi (PUCV)
- "Study of the implementation of the Intercultural Bilingual Education Program (*Programa Educación Intercultural Bilingüe – Orígenes*, PEIB-Orígenes) in schools targeted by the program, March-December (2009) Marcela Pardo, Juan Pablo Valenzuela
- "Standards for the *managers* of public education": Juan Pablo Valenzuela (UCH), Carmen Montecinos (PUCV) (with Valentina Abufhele and others).
- 'School Textbook Project: proposals for school textbook policy": Carmen Sotomayor
- "Construction of a model for gender analysis in the design, implementation and evaluation of educational informatics programs and policies". ENLACES (2008-2009) Jaime Sánchez
- "Learning Mobile for Biology", (2008). Innovación-Ministerio de Educación. Jaime Sánchez
- "Digital inclusion to understand science". Innovación-Ministerio de Educación. (2008). Jaime Sánchez
- "Proposal for the design and implementation of an e-learning program for updating teachers in scientific education" – "research as a strategy for science learning". (2008-2009). Carmen Sotomayor
- "Evaluation of school textbooks", (2006, 2007, 2008, 2009). María Leonor Varas

EXPLORA CONICYT
- 'Design of a methodology to enhance primary education science skills'. Roberto Araya.

UNDERSECRETARIAT OF REGIONAL DEVELOPMENT
- 'Socio cultural identity in the Province of Arauco (Orchestras and School Bands) Juan Pablo Valenzuela with Pablo Egaña.

CODELCO-CMM
- 'Analysis of an optimal settlement - *Minera El Salvador*: Educational component'. Juan Pablo Valenzuela with Pablo Egaña.

Others
- Workshops on Chilean educational policy. CIAE-UNICEF Juan Pablo Valenzuela and Cristián Bellei.
- 'Diagnosis and perspectives of cultural development and education in the Province of Arauco. Fundación Arauco. Juan Pablo Valenzuela and Marcela Pardo

III. OBJECTIVES AND ACTIVITIES

This section sets out the Center's objectives and first year activities.

The Center's overall purpose is to contribute, from an academic base, to the improvement of education in Chile. The Center is multidisciplinary, promotes excellence and engages 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; an intensive program for the training of new researchers; to strengthen post graduate programs related to education; create research networks with national and international universities and research centers; and to provide a communications focal point for academic, social actors 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: Educational Policies, Teachers; Teaching and Learning; Cognitive Sciences and Neuroscience Applied to Education; and Learning, Cognition, Information Technologies and the Brain. All five areas are involved in basic and applied research as well as development and outreach activities.

Educational Policies
The goal of this area is to produce research so that educational policies, programs and educational strategies are increasingly based on scientific evidence. This area entails four research strands: the institutional arrangement of the education system; local educational management; educational outcomes and higher education.

Teachers
This area examines factors which have an impact on teacher quality, teachers' labor market, the professional status and working conditions of teachers, teacher education and teacher effectiveness.

Teaching and Learning
This area focuses on teaching and learning in mathematics, language and the sciences. From this prism it is concerned with quality of teaching and learning; teacher preparation, the beliefs of students and teachers, and content knowledge.

Cognitive Sciences and 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. Its work is organized around two kinds 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.

Learning, Cognition, Information Technologies, and the Brain
This area examines the relationships between technology, education and learning; its aim is to design, develop and validate models for the use of technology in the

classroom; and investigate the interactions that groups with specific disadvantages establish with technology. The main research areas are: the impact of an interactive virtual environment for learning and cognition; videogames for learning and the development of skills in 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.

These areas collaborate among each other according to the research fields and specific projects being developed. Current projects financed with PIA-CONICYT funds are listed in the appendix of this report.

Five Centers of Universidad de Chile collaborate with Center for Advanced Research in Education: the Center for Applied Economy (*Centro de Economía Aplicada*, CEA); the Center for Microdata (*Centro de Microdatos*); the Center for Computation and Communication for the Construction of Knowledge, (*Centro de Computación y Comunicación para la Construcción del Conocimiento*, or C5); the Center for Mathematical Modeling (*Centro de Modelamiento Matemático*, CMM); and the Center for Research in Social Structure, (*Centro de Investigación de Estructura Social*), of the School of Social Sciences. The associated universities bring capacity for research and experience in collaborative projects, so contributing toward a definition of the research areas. Academics of different Schools and universities make up the areas teams. The Center has 50 associated researchers. The strength of this collaboration and the effort to produce high quality research is new in the field of educational research in Chile.

The Center's general objective is to undertake multidisciplinary scientific research at the highest level and to generate relevant knowledge to improve educational quality and equity to contribute to the improvement in the training of teachers, the management of educational processes and the design and implementation of public policies.

The specific objectives are;
- To generate knowledge and collaboration so that educational policies and programs, and their management, are increasingly based on scientific evidence
- To generate knowledge about the main factors that influence the quality of teachers, both their initial and continuous professional development as well as 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.

The expected impact of the Center's work is to:
- To increase the number of ISI or equivalent publications in the area of education and disciplines related to the project
- To increase the number of new researchers in education
- To increase the number and quality of proposals of teaching strategies and support resources for teachers to improve student learning outcomes

- To collaborate in the improvement of initial and continuous education of teachers and their professional development
- To collaborate in curriculum development and in the improvement of evaluation systems of schools, teachers, and students;
- To contribute to the evaluation and monitoring of public policies.

The Center's products are;
- Research; publication of articles in ISI indexed journals and international refereed journals; books, chapters in books and articles in national journals. Host foreign invited academics on a continuous basis.
- Human resource training; postdoctoral, doctoral and master's theses
- Organization and participation on international conferences, summer schools, seminars.
- Innovation and transfer; development of accessible materials for teacher and principals in the school systems; activities with the Ministry of Education and other participants in the national educational system.
- The Center's researchers have maintained a high level of publications and scientific communication in prestigious international conferences and meetings, consistent with the demands of scientific productivity. The Center hosts academic seminars offered by visiting academics open to in-Center and academic staff from other institutions, including policy-makers and the general public. To boost their preparation and exposure to scientific research, emphasis is placed on the participation of postgraduates and young researchers in national and international meetings.

Activities undertaken
The principal researchers and associates have published the following (for details see the section on Products):

Publications
- Journals indexed by ISI
  - 15 articles accepted
  - 10 articles submitted
- 10 articles published in other international journals
- 31 full-length papers in International Conference Proceedings
- 4 articles published in national journals
- 3 edited books
- 30 book chapters

Advanced level training in the area of education
The Center contributes to training in the following ways:
- Supervising and offering advice for Doctoral dissertations and Master's theses at member universities, as well short-term placement opportunities for students interested in the Center's objectives. The Center's multidisciplinary and international character offers a stimulating and varied environment which is both stimulating and attractive to talented students and contributes to their training.

- Placement opportunities for Chilean post-graduate students enrolled in foreign universities during their data-collecting phase in Chile. Training of young Chilean researchers.

Thesis supervision
Complete and in process (see complete list in the section entitled Products):

Theses
- Doctoral and Master's theses
  - 3 completed Doctoral dissertations
  - 7 Doctoral dissertations in progress
  - 10 completed Masters' theses
  - 6 Masters' theses in progress

- Undergraduate theses
  - 13 completed theses
  - 13 theses in progress

Visits abroad

Students
Gonzalo Mena Carrasco, Engineering Mathematics student, participating in the Center's project on learning and teaching mathematics (inhibition and factions). Traveled to U.C San Diego where he participated in the laboratory of Professor Rafael Núñez to learn experimental techniques and statistics.

Researchers
Peña, Marcela. Research visit to the Language and Cognition Development Laboratory, of the *Scuola Internazionale Superiore di Studi Avanzati* (SISSA), Trieste, Italy from 12 January to 7 March 2008 and 6 June to 26 July 2008

Young Researchers in Doctoral Programs
- Daniela Jiménez is studying for her doctorate in the psychology of learning at the German Institute for International Educational Research, Frankfurt am Main, Germany.
- David Maximiliano Gómez Rojas is studying for his doctorate in Cognitive Neuroscience at the *Scuola Internazionale Superiore di Studi Avanzati* (SISSA/ISAS) in Trieste, Italy

Training of young researchers:
Currently the Center has 8 junior researchers contributing to different research projects;

- Pablo Egaña: Economista, Master in Economics
- Alejandro Sevilla: Degree in Economics
- Valentina Abufhele: Degree in Sociology
- Paula Cavada: Degree in Psychology, Master in Psychology student
- Mariel Gómez: Degree in Psychology
- Alejandra Osses: M. Ed. in Education

- Paulina Ruiz: Degree in Sociology- Master of Education and Communication student
- Claudio Allende: Degree in Economics, studying for Master's degree in Public Policy

Paula Cavada, Alejandra Osses and Valentina Abufhele applied for doctoral scholarships to begin their PhD programs in 2010.

Courses

Center's researchers have taught 19 courses based on Center-related themes offered in different Schools of the University of Chile at the undergraduate, graduate, pre thesis and graduate levels (see the section on products for details)

Seminars

The Center has held **14 academic seminars** and on October 16, 2009 it will hold a seminar for discussion of current research project results. This seminar will be attended by all associate researchers and will take place at the P.C University of Valparaiso.

Internal Seminars of the Center for Advanced Research in Education,
University of Chile 2008-2009

October 9, 2008
Pablo Egaña: "The relevance and impact of artistic activities in school results: the case of the youth orchestra of Curanilahue"

October 23, 2008
Roberto Araya: "The Teaching of Mathematics in Chile"

November 6 2008
Alejandra Osses: "Comparative analysis of results differences among countries participating in international evaluations of learning"

November 20, 2008
Dante Cajales: "The area of technological development and information"

January 8, 2009
Irene Reyes: "Inquiry a strategy for the teaching the natural sciences"

January 15, 2009
Claudio Allende: "Intergenerational mobility in Chile. Luck is out?"

January 22, 2009
María Leonor Varas: "The preparation of future primary school teachers in mathematics"

January 29, 2009
Patricio Felmer: "Toward a better future or the way education is seen in Singapore"

May 28, 2009
Alejandro Sevilla: "Principal factors that explain differences in math and reading results in PISA-2006 among Chile, other OECD and Latin American countries".

June 4, 2009
Juan Pablo Valenzuela: "The causes that explain the improvement of results obtained in PISA 2006 compared to PISA 2000 by Chilean students: lessons and policies"

June 18, 2009
Cristián Bellei: "Educational Technical Assistance: does it improve learning in the poorest schools?"

June 2, 2009
Carmen Sotomayor: "Results of a consultancy on textbook production for the Ministry of Education"

July 9, 2009
Marcela Pardo: "Validity and reliability criteria in qualitative research projects"

July 22, 2009
Valentina Abufhele, "Standards and indicators for performance of managers in the Chilean public education system".

International Conference

The Center held an international conference on December 3, 2008 to celebrate its official inauguration. Around 100 people attended including academics, students and professionals working in different parts of the public sector. Presentations and topics included the following:

John Bruer, President James S. McDonnell Foundation, USA. "Contributions of Psychology and Neuroscience to an Applied Science of Learning"

Ann Lieberman, Professor, Stanford University, USA "Teacher knowledge and the study of practice; new visions, new tools, new understanding"

Alvaro Pascual-Leone. Professor, Harvard University, USA. Director of the Center for Noninvasive Brain Stimulation: "Guiding a plastic brain"

Jere Behrman. Professor, University of Pennsylvania, "A review of educational research related to developing countries"

Lily Orland-Barak, Director, Education Department University of Haifa, Israel. "Local practices and its anchor in research; global models and local design for the practice of mentoring"

Visiting scholars - 23 have been hosted

Kenneth King, University of Edinburgh: Talk and discussion on the international education network *NORRAG*, with the Nucleus Millennium team and invited external guests.

Rafael Núñez (Department of Cognitive Science, UC San Diego, USA), Talk "Mathematics, education, and human cognition; some reflections on things that we should not forget"; and meeting with members of the Teaching and Learning of Mathematics group

Mary Zajicek, Oxford Brookes University, UK. Talk "In-Car Speech Messages and Older Driver Safety", Computer Science Department, Faculty of Physics and Mathematics, University of Chile, April 28, 2009

Bjorn Skaar, Intermedia, University of Oslo, Norway. Talks; "Video Documentation as a Research Tool", Computer Science Department, Faculty of Physics and Mathematics, University of Chile, March 3, 2009; and "Storytelling and Videogames", Center for Computation and Communication for the Construction of Knowledge (C5), March 6 2009

Lotfi Merabet. (Harvard University, USA). Center for Noninvasive Brain Stimulation, Harvard University. Talk "Neuroplasticity in the Blind: Towards Developing Assistive Technology. December 2008

Paulo Gileno Cysneiros, Federal University of Pernambuco, Brazil. Talk "Laptops in the Brazilian public schools and Latin America", International Workshop of Educational Software, TISE 2008, Santiago, December 2008.

Richard Murnane, Harvard Graduate School of Education, Talk "Educating Disadvantaged Children" June 2008.

Katherine K. Merseth, Harvard Graduate School of Education. Talk "Charter Schools: Threat or opportunity for public education? June 2008

Edward Melhouish, University of London, invited by Project FONDEF 1029.

Della Peretti, Academic Coordinator Developmental Teacher Education Program Graduate School of Education, University of California, Berkeley. Meeting with members of the Center to learn about UC Berkeley's experience in teacher training.

Martin Carnoy, Ph.D. Professor of Education and Economics at the School of Education, Stanford University, USA. Meeting to discuss ideas about the research areas of the Center.

John T. Bruer, President, James S. McDonnell Foundation, USA. Workshop with the principal investigators

Jere Behrman, Professor of Economics, University of Pennsylvania, USA. Workshop with the principal investigators

Ann Lieberman, Stanford University. Workshop with the Nucleus Millennium and a workshop with the Center's principal investigators

Lily Orland-Barak, Director, Education Department, University of Haifa, Israel. Workshop with the Millenium Nucleus and a workshop with the Center's principal investigators

Alvaro Pascual-Leone Ph.D. Professor of the School of Medicine and Director, Center for Noninvasive Brain Stimulation, Harvard University, United States

Agnes Van Zanten, Professor, University of Paris

Susan M. Fitzpatrick, James S. McDonnell Foundation, USA. JSMF Steering Committee Meeting for Summer School in Cognitive Science, Neuroscience and Education. Santiago, 4-5 December 2008.

David Klahr, Carnegie-Mellon University, USA. JSMF Steering Committee Meeting for Summer School in Cognitive Science, Neuroscience and Education. Santiago, 4-5 December 2008

Mark McDaniel, Washington University in St. Louis, USA. JSMF Steering Committee Meeting for Summer School in Cognitive Science, Neuroscience and Education. Santiago, 4-5 December 2008

Jacques Mehler, Director of the Language, Cognition and Development Laboratory at the Higher International School of Advanced Studies, Trieste, Italy. JSMF Steering Committee Meeting for Summer School in Cognitive Science, Neuroscience and Education. Santiago, 4-5 December 2008. Workshop with principal investigators

Sidarta Ribeiro, International Institute of Neurosciences, Natal-ELS, Brazil. Steering Committee Meeting for Summer School in Cognitive Science, Neuroscience and Education. Santiago, 4-5 December 2008

Mariano Sigman, University of Buenos Aires, Argentina. JSMF Steering Committee Meeting for Summer School in Cognitive Science, Neuroscience and Education. Santiago, 4-5 December, 2008. Workshop with principal investigators

Center researchers have presented their papers in **national and international conferences and semina**rs and given outreach presentations in many institutions (see list in the section, Products);

- 22 international conferences
- 36 national conferences
- 14 outreach and communication talks

Cognitive and Neurosciences Laboratory
This first year has seen the initiation and implementation of the laboratory to explore the cognitive and neurosciences, as described in the section above III Key .

International Summer Schools in Cognitive Sciences, Neuroscience and Education
This school is described in section III Key Developments, 4.

National and International Cooperation
The Center has scientific relations with centers at the universities of Harvard, Michigan, Stanford University and Pennsylvania (USA); Stockholm (Sweden); UQAM-Montreal (Canada); Haifa (Israel); Catholic University of Louvain (Belgium); Valencia (Spain); the James S. McDonnell Foundation (USA); Scuola Internazionale Superiore di Studi Avanzati (SISSA, Italy), Max Planck Institute for Human Development (Germany); German Institute for International Pedagogical Research (Germany) and the Program for the Promotion of Educational Reform in Latin America and the Caribbean (PREAL).

These links are manifested in the composition of the **International Scientific Committee**, which advises the Center on its strategic decisions.

Jere Behrman, Ph.D. Professor of Economics at the University of Pennsylvania, USA.

John Bruer, Ph.D. President of the James S. McDonnell Foundation, USA.

Martin Carnoy, Ph.D. Professor of Education and Economics at the Stanford University School of Education, USA

David Cohen, Ph.D. Professor at the University of Michigan School of Education and School of Public Policy, USA

Vincent Dupriez, Ph.D. Researcher, Interfaculty Research Group on Education Systems and Training, (GIRSEF); Professor at the Catholic University of Louvain, Belgium.

Gerd Gigerenzer, Ph.D. Director of the Center for Adaptive Behavior and Cognition at the Max Planck Institute for Human Development, Germany

Jacques Mehler, Ph.D. Director of the Language, Cognition and Development Laboratory at the International School for Advanced Studies, Trieste, Italy

Alvaro Pascual-Leone, Ph.D. Professor at the School of Medicine, Harvard University; Director of the Center for Non-Invasive Brain Stimulation, USA.

Lily Orland-Barak, Ph.D. Director of the Department of Education at Haifa University, Israel

Fernando Reimers, Ed. D. Director of Global Education and of International Education Policy at Harvard University, USA

In December 2008 the Center held a workshop with five members of the International Scientific Committee; John Bruer, Jere Berhman, Jacques Mehler, Alvaro Pascual-Leone, and Lily Orland-Barak. The principal investigators explained the research activities and the projects being undertaken at the Center. After a productive interchange, the Committee met in private, chaired by John Bruer, to evaluate the Center's work.

The Center has links with other centers and schools at the University of Chile, with the associated universities and researchers at other universities in Chile. This work has generated co-authorships, co-editions of books and joint projects (see details of the papers and co-authored books in the section, Products). The international co-authors are underlined.

Transfers, Outreach and Communication
The Center has had an important impact because of its links to education policy makers, with the school system, with teachers and their training: also it has produced a large number of publications in international journals.

The Center has developed a series of relevant projects for the Ministry of Education, some of them are: (a complete list is to be found the section II Key Developments)

- Cooperation with the Ministry of Education in the design of a public policy to strengthen Chilean public education.
- Development of content and pedagogic standards for primary level initial teacher education in the fields of mathematics, language and communication. For mathematics, the Center works with the University of Chile's Center for Mathematical Modeling (CMM) and for language with the P.C. Catholic University of Valparaiso. The project was requested by the Ministry of Education.
- School Textbooks Project: Consultancy and advice to the Ministry of Education on school textbooks.
- Development of an analytic framework and data collection instruments for the Longitudinal Study of Students. Collaboration with the UNDP according to an agreement with the Ministry of Education.
- Proposal to establish standards for managers of public education schools. In association with the P.C University of Valparaiso.

The Center is linked to the ENLACES program through its 'Cognition, Information Technology and the Brain' area and its collaboration with Center C5 to support the Ministry of Education's growing efforts to continue the high level of information technology in schools by:

- Construction of an analytic model by gender for the design, implementation and evaluation of programs and policies of information technology in education. ENLACES
- The Biology Mobile Learning Unit, AMB, (2008) Innovation-Ministry of Education
- Digital Inclusion for Learning Science, IDAC. Innovation-Ministry of Education

The Center is also developing projects in association with UNICEF (Workshop on Educational Policy), projects requested by the Arauco Foundation (*Fundación Arauco*) – Diagnosis and perspectives on cultural development and education in the province of Arauco; and by EXPLORA-CONICYT (Design of a methodology to develop science's skills for primary schools)

Five different WEB sites have been created for Center projects; www.registroate.cl, www.asistenciatecnicaeducativa.cl, www.metaforas.cl, www.amathis.cl, and www.nucleomilenio.cl

Organization of a Mathematics Tournament for Primary Students

Within the framework of the FONDEF project, D06I-1031 'Strategies and Tools for the Teaching of Mathematics based on Metaphors' two **mathematics tournaments** have been organized. The aim of the tournaments is to motivate students by means of games using metaphors, which are used later for representation 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 500 primary school pupils from third to sixth grade; and the second on April 24, 2009 with 3,500 primary school students from third to eighth grade. Different regions were represented in both tournaments. The third National Tournament of Online Games will take place on October 23, 2009 and will involve pupils from first and second year of Secondary education, as well as primary school pupils from third to eighth grades.

Finally it is important to point out that Center researchers have obtained grants from the principal national research and development funds; FONDEF, Scientific Millennium Initiative, FONIDE-Ministry of Education and more recently FONDECYT as well as funds linked to international projects (see complete list in the Key Developments section)

Other national activities of Center researchers

Bellei Cristián
Member, Advisory Committee, Minister of Education

Castro, Abelardo
President of the Council of Dean of Faculties of Education, Council of University Rectors
Member of the Educational Study Group, FONDECYT-CONICYT

Correa, Rafael

Member of the ICSU-LAC Scientific Planning Group for Mathematics Education

Mizala, Alejandra
Member, Chilean National Science Council, FONDECYT-CONICYT.
Member, Council of the Fund for Research and Development for Education, (*Fondo de Investigación y Desarrollo de la Educación*, FONIDE)
Member, Advisory Committee, Minister of Education
Member, Advisory Committee for Graduate Studies Scholarships, new Bicentenary System, Chile (*BecasChile)*
Member, Advisory Council for the Human Development Report, United Nations Development Program, (UNDP)

Sanchez, Jaime.
Director, Educational Study Group, FONDECYT-CONICYT

Sotomayor, Carmen.
Coordinator, Evaluation Committee for Graduate Studies Scholarships in Education, CONICYT, Chile

Varas, María Leonor
Member, Executive Committee, Explora-Conicyt

Valenzuela, Juan Pablo
Member, Technical Advisory Committee for Teachers and Principals, Ministry of Education

IV. PRODUCTS

A. PUBLICATIONS

International Journals (ISI)

Aguayo, Luis. (with Sepúlveda FJ, Opazo C) Alzheimer beta-amyloid blocks epileptiform activity in hippocampal neurons. *Mol Cell Neurosci*. 41(4):420-8. (2009).

Avalos. Beatrice. "Teacher education in the Latin American Region: An unfinished Business. *Southern African Review of Education* 14 (1-2), 9-27**.** (2008)

Bellei, Cristián. "Does Lengthening the School Day Increase Students' Academic Achievement? Results From a Natural Experiment in Chile." (forthcoming) *Economics of Education Review***.** doi:10.1016/j.econedurev.2009.01.008

Gonzalez, Pablo. (with J. Velásquez). "Expanding the possibilities of deliberation: the use of data mining for strengthening democracy with an application to education reform". (forthcoming) *The Information Society***.**

Mizala, Alejandra. (with P. Anand y A. Repetto). Using School Scholarships to Estimate the Effect of Private Education on the Academic Achievement of Low Income Students in Chile". *Economics of Education Review*. Vol. 28: 370-381 (2009) http://dx.doi.org/10.1016/j.econedurev.2008.03.005

Peña, Marcela (with Pittaluga E, Farkas C). Adquisición fonológica en niños prematuros. (forthcoming) *Revista de Neurología*.

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Valenzuela, Juan Pablo and Osvaldo Larrañaga. Estabilidad en la desigualdad. Chile 1990-2003" Número Especial de *Estudios de Economía*, (forthcoming Diciembre 2009).

Valenzuela, Juan Pablo (with **Suzanne Duryea**) . Examinando la prominente posición de Chile a nivel mundial en cuanto a desigualdad de ingresos: Comparaciones Regionales. Número Especial de *Estudios de Economía* (forthcoming en Diciembre 2009).

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Araya, Roberto and Pablo Dartnell. (with D.M. Gómez). A stochastic model for learning processes with forgetting, submitted to *Statistics and Probability Letters*.

Mizala, Alejandra. (with Andrea Repetto y Francisco Henríquez). Effective Schools for Low Income Children: a Study of Chile's Sociedad de Instrucción Primaria, submitted to *Economic Development and Cultural Change*

Mizala, Alejandra. (with **Florencia Torche**). Bringing the Schools Back In: The Stratification of Educational Achievement in the Chilean Voucher System, (in revision) Comparative Education Review

Peña. Marcela. (with **Bion R, Nespor M**) How modality specific is the iambic-trochaic law? Evidence from Vision. Submitted to *Memory & cognition*.

Peña. Marcela. (with **Pittaluga E, Mehler J**). Comparing precocious language acquisition in premature and full-term infants. Proceeding of National Academy of Science.

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Montecinos, C., **Sisto, V. and L. Ahumada.** *The construction of parents and teachers as agents for the improvement of municipal schools in Chile*. *Comparative Education.*

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Sánchez, Jaime. (with Flores H.). Mobile Science Learning through Gaming for the Blind Proceedings of the X Simposio Internacional de Informática Educativa, SIIE 2008, Salamanca, España. pp. 1-6. October 1-3, 2008

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Soto-Andrade, Jorge. "Mathematics as the art of seeing the invisible…", Proc. 11th International Congress in Mathematical Education, Monterrey. Available at http://tsg.icme11.org/tsg/show/21, 10 p. (2008)

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Varas, María Leonor and Nancy Lacourly. "Teachers Mathematical Reasoning Does Matter", en Proff and Proving. ICMI Study 19 Conference Proceedings, Volume 2, pp. 47-52 (2009)

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Montecinos, Carmen. (with Williamson, G; Sleteer, C., Grant, C. y Padilla, P.). Educación Multicultural. Práctica de la equidad y diversidad para un mundo que demanda esperanza. Universidad de la Frontera. Departamento de Educación Universidad de Talca, Instituto de Desarrollo Educativo e Instituto Paulo Freire. (Esta publicación corresponde a una edición actualizada y complementada de la publicación: Montecinos, Carmen (with Williamson, Guillermo) (Orgs.) (1996) Educación Multicultural. Nuevos sentidos para la Pedagogía. Universidad de Talca-IIDE/Departamento de Educación Universidad de la Frontera, Talca, Temuco. Serie Estudios N° 9-10 (ISSN 0717-0521).

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Bellei, Cristián, Juan Pablo Valenzuela. (with Daniel Contreras) (eds) "La Agenda Pendiente en Educación" Programa de Investigación en Educación de la Universidad de Chile y UNICEF. Ocho Libros Editores (2008).

Sotomayor, Carmen (with Horacio Walker) (eds)*, Formación continua de profesores ¿Cómo desarrollar competencias docentes para el trabajo escolar? Experiencias, propuestas.* Santiago: Editorial Universitaria (2009).

Sánchez, Jaime. (editor). "Nuevas Ideas en Informática Educativa". Actas Taller Internacional de Software Educativo, TISE'08. Centro de Computación y Comunicación para la Construcción del Conocimiento, C5, Universidad de Chile: Santiago, Diciembre (2008)

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Ávalos, Beatrice. Los conocimientos y competencias que subyacen a la tarea docente. In *Aprendizaje y Desarrollo Profesional Docente.* Madrid: Colección Metas 2021 Santillana (2009).

Araya, Roberto and Pablo Dartnell. Saber pedagógico y conocimiento de la disciplina matemática en profesores de Educación General Básica, In *Selección de Investigaciones Primer Concurso FONIDE: Evidencias para Políticas Públicas en Educación*, MINEDUC (2009).

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Sánchez, Jaime. Luis Valdés. Videojuego para el aprendizaje de la biología en niños ciegos. Memoria de Ingeniero Civil en Computación. Depto. de Ciencias de la Computación. Universidad de Chile (2008) (in progress).

Soto-Andrade, Jaime. Seminarios de Pos título en Educación General Básica, mención Matemáticas, Universidad de Chile. Tema: Metáforas y Representaciones para la operatoria de enteros y fracciones en la Enseñanza Básica: 6 intervenciones didácticas. Lorena Cifuentes, Jenny Contreras, Ana María Gómez, Loreto Riveros, Blanca Torres, Jihecika Urriola (2008)

Soto-Andrade, Jaime. Seminarios de Pos título en Educación General Básica, mención Matemáticas, Universidad de Chile. Tema: Un sistema posicional sin cero como situación didáctica en Enseñanza Básica: 5 intervenciones didácticas. Raquel Barrera, Karen Escalona, Nathaly Galdámez, Claudia Ocampo, Roxana Rojas (2008)

Sotomayor, Carmen. Karin Donoso y Andrea Pinto. Expectativas de la educación parvularia en educadoras de párvulos y madres. Un estudio de casos. Tesis de pregrado de Educación Parvularia e Inicial, Departamento de Educación, Facultad de Ciencias Sociales. (Enero 2009). Finished.

Valenzuela, Juan Pablo. Amanda Telias (Tesis para optar al título de Ingeniero Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile). "Caracterización laboral de los docentes de educación básica con estudios superiores no tradicionales".

Valenzuela, Juan Pablo. Sebastián Guinguis (Tesis para optar al título de Ingeniero Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile). "Segregación de las elites en el sistema escolar chileno".

Valenzuela, Juan Pablo. Mariana Huepe (Tesis para optar al título Ingeniero Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile). "Evaluación del impacto del programa de educación en ciencias basado en la indagación sobre el aprendizaje y desempeño de alumnos y profesores".

Valenzuela, Juan Pablo. Gabriela Toledo (Tesis para optar al título Ingeniero Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile). "Los Profesores, ¿hacen la diferencia?: Una aproximación desde la beca de alumnos destacados en pedagogía".

Valenzuela, Juan Pablo. Paula Aravena (Tesis para optar al título Ingeniería Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile). (In progress).

Valenzuela, Juan Pablo. Amanda Castillo (Tesis para optar al título Ingeniero Comercial, mención economía. Facultad de Economía y Negocios, Universidad de Chile). (In progress).

Varas, María Leonor. Co-tutora de la memoria para optar al grado de Licenciado en Educación y al título de Profesor de Enseñanza Media en Matemática e Informática Educativa de la Universidad Católica Silva Henríquez, "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", de J. F. Borroni, K. A. Bustamante, R. C. Cofré.

D. COURSES TAUGHT

Araya, Roberto. Racionalidad, Evolución y Emocionalidad, curso formación general, Universidad de Chile, with Carlos Conca and Álvaro Fischer.

Araya, Roberto. Enseñanza para los nuevos estándares en matemática y estudio de videos de clases, Universidad de Chile, audience 130 teachers.

Araya, Roberto. Enseñanza de la matemática basada en metáforas y actividades con web 2.0 para ajuste curricular, Universidad de Chile, audience 130 teachers.

Araya, Roberto. Curso a profesores de enseñanza básica y media de Corporación Lo Prado.

Ávalos, Beatrice. Doctorado, Pontificia Universidad Católica de Chile: Módulo sobre Docentes (2009)

Ávalos, Beatrice. Seminario: Teoría y práctica sobre formación docente y perfeccionamiento docente en América Latina. Magíster en Políticas Educativas, U. Alberto Hurtado.

Ávalos, Beatrice. Curso: Investigación cualitativa en Educación, Programa de Doctorado en Gestión Educativa, Universidad de Playa Ancha de Ciencias de la Educación

Ávalos, Beatrice. Clase: "Estándares", Programa de Magíster en Gestión Educacional, Fundación Chile y Universidad del Desarrollo.

Bellei, Cristián. Políticas Educacionales. Magíster en Políticas Públicas, Escuela de Economía, Universidad de Chile

Bellei, Cristián. Políticas Educacionales. Magíster en Sociología, SUR-Profesionales / Universidad Academia de Humanismo Cristiano.

González, Pablo Economía de la Educación. Magister en Gestión y Políticas Públicas, Departamento de Ingeniería Industrial, Universidad de Chile

Sánchez, Jaime. Curso: Proyectos de Informática Educativa (Postítulo en Informática Educativa). DCC, FCFM. Universidad Chile.

Sánchez, Jaime. Curso: Aprendizaje y Cognición (Postítulo en Informática Educativa). DCC, FCFM. Universidad Chile.

Sánchez, Jaime. Curso: Cultura Informática (Postítulo en Informática Educativa). DCC, FCFM. Universidad Chile.

Sánchez, Jaime. Curso: Usos Educativos de Internet. (Postítulo en Informática Educativa). DCC, FCFM. Universidad Chile.

Sánchez, Jaime. Proyectos de Informática Educativa, Magíster en Educación, Mención Informática Educativa. Depto. De Educación, Facultad de Ciencias Sociales. Universidad Chile.

Sánchez, Jaime. Interacción Humano-Computador, Magíster en Educación, Mención Informática Educativa. Depto. De Educación, Facultad de Ciencias Sociales. Universidad Chile.

Soto-Andrade, Jorge. Jornadas de Actualización Profesional sobre Estudio de Casos, para Profesores de Enseñanza Media, Programa de Educación Continua, Universidad de Chile, (Enero 2009).

Valenzuela, Juan Pablo. Varios semestres 2008 y 2009. Economía de la Educación, Magíster y Doctorado de Economía, Facultad de Economía y Negocios, Universidad de Chile.

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- Eric Tanter, Doctor (Computer Sciences), Université de Nantes, Francia and Universidad de Chile (2004)
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- 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.

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

Centro de Estudios de Desarrollo y Estimulación Psicosocial, (CEDEP).
- Marta Edwards, Bachelor (Psychology), Pontificia Universidad Católica de Chile, Chile.

PARTICIPATING INSTITUTIONS

University of Chile (Universidad de Chile, UCH)

In association with:
Pontifical Catholic University of Valparaíso (Pontificia Universidad Católica de Valparaíso, PUCV)
University of Concepción (Universidad de Concepción, UDEC)

In collaboration with:
Instituto de Investigación y Desarrollo de la Educación de la Universidad de Talca
Centro de Estudios de Desarrollo y Estimulación Psicosocial, CEDEP

ANEX

A. Research projects funded by The Center (PIA-CONICYT CIE-05)

- Recent advances in theoretical modeling of the education market and secondary effects of educational interventions. Dante Contreras, Aldo González (UCH), Diana Krueger (PUCV).

- School choice, educational quality and performance in the labor market. Alejandra Mizala, Mattia Makovec (UCH).

- Evaluation of supply side public financial instruments for higher education. Carlos Cáceres, Osvaldo Larrañaga (UCH), Atilio Bustos (PUCV).

- Knowledge strategies in highly vulnerable educational institutions. Jorge Ulloa, Jorge Dresdner, Oscar Nail (UDEC).

- Distributed leadership and organizational learning in schools; exchange of successful practices at district level. Luis Ahumada, Verónica López, Vicente Sisto (PUCV), Juan Pablo Valenzuela (UCH).

- Academic achievement of university students from highly vulnerable backgrounds. María Inés Solar, María Elena Acuña, Lucía Domínguez (UDEC).

- Professional knowledge of future teachers. Beatrice Avalos, Marcela Pardo (UCH).

- 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 (UDEC).

- 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).

- Understanding of written texts; the relationship between early education, teaching practices and teacher learning in Basic Education. Carmen Sotomayor, Carmen Julia Coloma (UCH), Romualdo Ibáñez, Giovanni Parodi (PUCV).

- Cognitive strategies for mental calculation. Jorge Soto, Lino Cubillos, Grecia Gálvez, Eric Tanter (UCH), Arturo Mena (PUCV), Diego Cosmelli (PUC)

- Student civic education at the end of the second cycle of Basic Education; ten years after the international civic education study. Carlos Muñoz, Leonora Reyes, Nelson Vásquez (UDEC).

- The origins of the difficulties of learning fractions: a study from a scientific point of view. Pablo Dartnell, Roberto Araya, Marcela Peña (UCH), César Flores, Gamal Cerda (UDEC).

- The effect of item characteristics on the mathematics equity of the PSU test. Nancy Lacourly, Leonor Varas (UCH).

- Measurement of teacher knowledge for elementary education mathematics learning. Leonor Varas, Nancy Lacourly (UCH), Andrés Ortiz (UDEC), Alejandro López.

- How children learn; symbolic learning in preschool children. Marcela Peña, Andrea Slachevsky, Ennio Vivaldi (UCH), Luis Aguayo (UDEC).

- Integration of ICT and learning styles and teaching. Eduardo Meyer, David Contreras (UCV), Nibaldo Gatica, Miguel Ripoll, Jorge Valdivia (UDEC), Jaime Sánchez; Álvaro Salinas (UCH).

- Mobility and orientation through videogames for learning, MOVA. Jaime Sánchez, Mauricio Sáenz, Luis Guerrero (UCH), José Miguel Garrido (PUCV), Miguel Ripoll (UDEC).

B. **CALL FOR APPLICATIONS.**

The Latin American School for Education, Cognitive and Neural Sciences

San Pedro de Atacama, Chile. Hotel Kunza 15-26 March, 2010.

Sponsors: The James S. McDonnell Foundation and the Centro de Investigación Avanzada en Educación, Universidad de Chile/Center for Advanced Research in Education, University of Chile.

Faculty. Daphne Bevalier, Luca Bonatti, John T. Bruer, Gennaro Chierchia, Stanislas Dehaene, Ghislaine Dehaene-Lambertz, Judy Deloache, Luciano Fadiga, Lisa Feigenson, Susan Fitzpatrick, Albert M. Galaburda, Charles R. Gallistel, Isabel Gauthier, Rochel Gelman, Susan Goldin-Meadow, Kathryn Hirsh-Pasek, Frank C. Keil, David Klahr, Kenneth R. Koedinger, Kristi Lockhart, Bruce McCandliss, Mark A. McDaniel, Jacques Mehler, Roxana Moreno, Andrea Carlo Moro, Marina Nespor, Miguel A.L. Nicolelis, Marcela Peña, Michael Posner, Alexandre Pouget, Marcus E. Raichle, Sidarta Ribeiro, Luiggi Rizzi, Robert S. Siegler, Mariano Sigman, Robert Stickgold, Janet F. Werker

Applications are now open for the first in a series of schools aimed at training students in Cognitive and Neural Sciences research applied to learning and education. Applicants should be English-speaking graduate/postgraduate students and young researchers dedicated to explore the relationship between cognition, brain, learning and education.

Application procedures. Interested researchers should register at http://www.laschool4education.com. Applications will remain open until October 10, 2009. The school will cover all travel and living expenses for selected candidates.

More complete information is available here: laschool4education.com