

# Federico Ferrero

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[Personal Portfolio Website](#)  
[GitHub](#)

## Employment

University of Texas at Dallas, School of Economic, Political and Policy Studies, U.S.A.  
Teaching Assistant (in Public Affairs Doctoral Program) (from August 2021 - Present).

Dallas College, U.S.A.  
Instructional Specialist (October 2019 - August 2021).

National Scientific and Technical Research Council, Argentina.  
Postdoctoral Fellow (April 2017 - May 2019).

National Scientific and Technical Research Council, Argentina.  
Doctoral Scholar (April 2012 - March 2017).

## Education

University of Texas at Dallas	U.S.A.	Public Affairs	Ph.D.	From 2021
University of Texas at Dallas	U.S.A.	Social Data Analytics and Research	M.A.	2021
National University of Cordoba	Argentina	Educational Sciences	Ph.D.	2016
National University of Cordoba	Argentina	Psychology	B.A.	2014
National University of Cordoba	Argentina	Educational Sciences	B.A.	2010

## Teaching

*Catholic University of Cordoba. School of Philosophy and Humanities, Argentina.*

Spring & Fall 2017, Logic and Epistemology.

*National University of Cordoba. School of Philosophy and Humanities, Argentina.*

Fall 2017, Statistics and Educational Information Systems.

Spring 2017, Educational Sciences Leveling Course.

*National University of Villa Maria, Argentina.*

Fall 2014, Learning Theories.

*Provincial University of Cordoba. School of Education, Argentina.*

Spring & Fall 2016, Academic Reading and Writing Workshop.

Fall 2015, Academic Reading and Writing Workshop.

## **Research Interests**

- Learning Analytics & Academic Analytics.
- Vygotskian approach in Learning Sciences.
- Learning of Logic and Computer Programming.
- Data mining in Education.
- Artificial Intelligence and Governance.
- Prediction in Education.
- Digital Humanities.

## **Research Projects**

Research Assistant. Project: "Digital environments and gender identities in adolescence (EDIGA)". Stellae Group. University of Santiago de Compostela, Spain, 2020-2024.

Research Assistant. Project: "Logic, reasoning and argumentation models: contributions from the integration of formal, cognitive and historical approaches". National University of Cordoba, Argentina, 2016-2017.

Research Assistant. Project: "Non-standard inference models applied to common reasoning. An approach from the philosophy of logic". National University of Cordoba, Argentina, 2014-2015.

Research Assistant. Project: "Senses and strategies of the inclusion of educational digital technologies in the University: The experience of teachers in undergraduate courses at the UNC". National University of Cordoba, Argentina, 2012-2013.

Research Assistant. Project: "Alternative notions of logical consequence for common reasoning". National University of Cordoba, Argentina, 2012-2013.

Research Assistant. Project: "Notions of logical consequence. Logical-philosophical and historical aspects". National University of Cordoba, Argentina, 2011-2013.

Research Assistant. Project: "Senses and strategies of the inclusion of educational technologies in the University: political and curricular analysis of undergraduate courses at the UNC". National University of Cordoba, Argentina, 2010-2011.

Research Assistant. Project: "University in the Knowledge Society. Institutional strengthening of areas dedicated to university teaching with new technologies". Spanish Agency for International Development Cooperation (AECID), Spain – Argentina, 2008-2012.

Research Assistant. Project: "Political, organizational, and didactic strategies in teacher training: an innovative case study". National University of Cordoba, Argentina, 2008-2009.

Research Assistant. Project: "Power, practices, and agency: current debates in the social sciences". National University of Cordoba, Argentina, 2008-2009.

## Book

Ferrero, F. (2018). *Informal Logic learning and use of new technologies for plotting arguments: a case study at the National University of Cordoba*. Córdoba: Editorial de la FFyH, UNC. Available online: [https://ffyh.unc.edu.ar/secyt/wp-content/uploads/sites/22/2019/04/EBOOK\\_FERRERO.pdf](https://ffyh.unc.edu.ar/secyt/wp-content/uploads/sites/22/2019/04/EBOOK_FERRERO.pdf)

## Peer-Reviewed Publications

Ferrero, F. & Gewerc, A. (in press). Algorithmic Driven Decision-Making Systems in Education: Analyzing Bias from the Sociocultural Perspective, Proceeding *LACLO 2019*.

Ferrero, F. (in press). Learning to Program Computers: Systematic Literature Review and Vygotskian Discussion, Proceeding *LACLO 2019*.

Ferrero, F. & Gewerc, A. (2019). An activity system for argument diagramming with ICT: can we talk about educational innovation?. *Digital Education Review*, (35), 244-266. Available online: <https://revistes.ub.edu/index.php/der/article/view/19233/pdf>

Ferrero, F. (2018). Big data and education: a vygotskian analysis of "predictive algorithms of student success". In Mercado, P., González N., Ferrero, F. y Beltramino, L. (Eds.), *Contextos de producción de la teoría de lev Vigotsky, a 120 años de su nacimiento. Actualizaciones y perspectivas de investigación en aprendizajes y educación*, pp. 173-199. Córdoba: FFyH, UNC. Available online: <https://ansenuza.unc.edu.ar/comunidades/handle/11086.1/1248>

Ferrero, F y Letzen, D. (2018). Metacognition and networks of arguments. En Chibeni, S. et al. (Eds.), *Filosofía e Historia de la Ciencia en el Cono Sur. Selección de trabajos del X Encuentro AFHIC*, pp. 193-204. Córdoba: UNC.

Ferrero, F., Gewerc, A. & Letzen, D. (2018). Activity System Transformation with ICT: the Case of Argument Diagramming in Logic, Proceeding *LACLO 2018*. DOI: DOI 10.1109/LACLO.2018.00053

Ferrero, F., Gewerc, A. & Letzen, D. (2017). Network Analysis Software for Diagramming Arguments in Informal Logic Classes, Proceeding *LACLO 2017*. DOI: [10.1109/LACLO.2017.8120928](https://doi.org/10.1109/LACLO.2017.8120928)

Ferrero, F. (2017). “Aprendizaje de Lógica Informal y uso de nuevas tecnologías para la diagramación de argumentos: un estudio de caso en la Universidad Nacional de Córdoba”, *Propuesta Educativa*, vol. 1, no. 47, pp. 156-158.

Ferrero, F. (2016). Revisión crítica, política y pedagógica de la Minería de Datos y sistemas Tutoring en educación. In La Serna, C. (Coord.) *Estado, política pública y acción colectiva. Praxis emergentes y debates necesarios en la construcción de la democracia*, 268-275. Córdoba: Libros del IIFAP (e-book). ISBN: 978-950-33-1255-1.

Massolo, A. & Ferrero, F. (2016). Vínculos entre lógica y psicología del razonamiento: un estudio exploratorio sobre diagramación de argumentos. *Cogency: journal of reasoning and argumentation*. Vol 8, N°1, 43-68. ISSN 0718-8285.

Massolo, A. & Ferrero, F. (2015). Lógica y psicología del razonamiento: un caso de representación de argumentos. In Ahumada, J., Venturelli, A. N. y Chibeni, S. (Eds.) *Filosofía e Historia de la Ciencia del Cono Sur: selección de trabajos del IX Encuentro y las XXV Jornadas de Epistemología e Historia de las Ciencia*,

463-475. Córdoba: Editorial de la UNC. ISBN: 978-987-707-026-2

Letzen, D., Massolo, A. & Ferrero, F. (2013). Uso de software para la representación de argumentos en lógica informal. In Severgnini, H., Morales, J. G. y Ravinovich, D. (Eds.) *Epistemología e Historia de las Ciencia*. Vol 19, 239-246. Centro de Investigaciones María Saleme de Burnichon, Facultad de Filosofía y Humanidades, Universidad Nacional de Córdoba. ISBN: 978-950-33-1073-1

Ferrero, F. (2013). La integración tecnológica en relación con los contenidos disciplinares. Un caso de enseñanza de la Lógica con el software El Mundo de Tarski. *Cuadernos de Educación*, XI, 11, 1-17.

## Conference Participation-Presentations

- 2019 "Learning to Program Computers: Systematic Literature Review and Vygotskian Discussion". XIV Latin American Conference on Learning Technologies (LACLO). Mexico.
- "Algorithmic Driven Decision-Making Systems in Education: Analyzing Bias from the Sociocultural Perspective" (with Adriana Gewerc). XIV Latin American Conference on Learning Technologies (LACLO). Mexico.
- 2018 "Self-confrontation interviews in the classroom to learn how to diagram arguments in Logic" (with Adriana Gewerc). 14<sup>th</sup> International Congress of Qualitative Inquiry, University of Illinois at Urbana-Champaign, U.S.A.
- 2017 "Formal languages and computer programming: a study from the sociocultural approach" (with Diego Letzen and Valentin Basel). V Congress on Argumentation, Psychology of Reasoning and Critical Thinking, Diego Portales University, Chile.
- "Big data and education: a Vygotskian critique of 'predictive algorithms of student success'". X Conference on Research in Education. 10 years after the National Education Law (LEN): Education: social law and state responsibility. National University of Cordoba. Argentina.
- 2016 "Predicting learning with Educational Technology: a critique from the Vygotskian approach". "Tribute Day to Lev Vygotsky, 120 years after his birth. Production contexts of the theory, updates and perspectives in learning and education". National University of Cordoba. Argentina.
- 2016 "An 'activity system': diagramming of arguments with new technologies in Informal Logic university classes". IV Conference on Research and Intervention in Psycho-pedagogy. Learnings: disorders and approaches". Catholic University of Cordoba. Argentina.
- 2015 "Network arguments in Informal Logic" (with Alba Massolo). XXVI Conference on Epistemology and the History of Science. National University of Cordoba, Argentina.
- "Pedagogical criticism of data mining and tutoring systems in education". VI International Colloquium of IIFAP. State, public policy, and collective action. Emerging praxis or necessary debates in the construction of democracy. National University of Cordoba, Argentina.
- "Learning with network argument diagrams: cognitive pluralism in bidirectional relationships". IX Conference on Research in Education: Policies, Transmission, and Learning. National University of Cordoba. Argentina.
- "Argumentation in network and metacognitive activity" (with Diego Letzen). IV International Congress of Argumentation, Psychology of Reasoning and Critical Thinking. Diego Portales University, Chile.

- "Different perspectives around psychologism in Logic" (with Alba Massolo). IV International Congress of Argumentation, Psychology of Reasoning and Critical Thinking. Diego Portales University, Chile.
- 2014 "Learning of Informal Logic with network and tree diagrams: "self-confrontation" interviews with university students". I Congress of Qualitative Research in Social Sciences - I Post Congress ICQI (International Congress of Qualitative Inquiry), XXI Century University, Argentina.
- "Links between logic and reasoning psychology" (with Alba Massolo). Philosophy Area of the Research Center. School of Philosophy and Humanities. National University of Cordoba. Argentina
- "Logic and psychology of reasoning: a case of representation of arguments" (with Alba Massolo). XXV Conference on Epistemology and the History of Science. National University of Cordoba, Argentina.
- "Doctoral research project progress". V Internal Conference of the Doctorate Degree in Education Sciences. National University of Cordoba. Argentina.
- "Informal Logic learning with diagrams of arboreal and network arguments: use of specific software and for network analysis from the Vygotskian perspective". I International Congress of Psychology & IV National Congress of Psychology: Science and Profession. National University of Cordoba. Argentina.
- 2013 "Evaluation and social production of arguments through web applications" (with Diego Letzen, Alba Massolo and Sara Gismondi). VI International Symposium Representation in Science and Art. National University of Cordoba, Argentina.
- "Images and learning of Logic with software: new representation modalities for the construction of knowledge from the Vygotskian perspective". VI International Symposium Representation in Science and Art. National University of Cordoba, Argentina.
- "Technological determinism: contributions from Vygotsky's philosophy and psychology to address discussions in the field of Educational Technology". II Latin American Congress of Philosophy of Education. University of La Republica. Uruguay.
- "Technologies: an analysis of the current theoretical production field to frame the study of Logic learning with diagramming software". I International Congress of Knowledge, Technologies, and Teaching: University Policies and Practices. University of Santiago de Compostela. Spain.
- "Evaluation and social production of arguments in pedagogical settings mediated by technologies" (with Diego Letzen and Alba Massolo). III Congress on Argumentation, Psychology of Reasoning and Critical Thinking, Diego Portales University, Chile.
- 2012 "Use of software for the representation of arguments in Informal Logic" (with Diego Letzen and Alba Massolo). XXIII Conference on Epistemology and History of Science. National University of Cordoba. Argentina.
- "Integration of new technologies to the university curriculum. Views from the Philosophy students at UNC (Argentina)" (with Jessica Arevalo). III European Conference on Information Technology in Education and Society: A Critical Insight TIES 2012. University of Barcelona. Spain.
- "UNC freshmen students: knowledge, practices, and perceptions about digital technologies in the School of Philosophy and Humanities" (with Joel Armando, Marcela Pacheco, and Jessica

- Arevalo). II Conference on Experiences and Research in EaD and Educational Technology. National University of Cordoba. Argentina.
- 2011 "Diagrammatic and linguistic representations in Logic learning: theoretical approaches for a plan of inquiry" (with Adriana Gewerc). XIX University Conference on Educational Technology JUTE 2011. University of Sevilla. Spain.
- "Freshmen university students in Latin America: what young students at Universidad Nacional de Córdoba know, do and think about ICT" (with Joel Armando, Marcela Pacheco, Jessica Arevalo). International Study Association for Teachers and Teaching (ISATT). Portugal.
- "Technological integration in relation to disciplinary content. A case of Logic teaching with the software 'El Mundo de Tarski'". National University of Cordoba. Argentina.
- "The curricular experience of the students: the sense of inclusion of ICT in the university teaching of the humanities". VII Conference on Research in Education. Crossroads of education: knowledge, diversity, and inequality. National University of Cordoba. Argentina.
- "Pedagogy of representations... New technologies and representational formats with images". V International Symposium. Representation in science and art. SIRCA 11. National University of Cordoba, Argentina.
- 2010 "Research progress report. Teaching at the university for the Knowledge Society: the place of ICT in the curricular determination processes" (with Joel Armando, Marcela Pacheco, and Jessica Arevalo). V International Seminar of the UNISIC Network. Curricular Determination in the Information Society. La Frontera University. Chile.

## Research Visits

- LINK Research Lab, University of Texas at Arlington, U.S.A. Tutor: Dr. George Siemens. Project: "Algorithmic Driven Decision-Making Systems in Education: Analyzing Bias from the Sociocultural Perspective". September-December 2018.
- Lab of Comparative Human Cognition, University of California at San Diego, U.S.A. Tutor: Dr. Stefan Tanaka. Project: "Learning of computer programming languages in Argentine primary school children: an analysis from the Vygotskian perspective". May-June 2018.
- State University of Campinas, Brazil. Tutor: Dr. Luci Banks Leite. Project: "Diagrammatic and linguistic representations in the learning of Logic: use of specific software in university classrooms of the National University of Cordoba". November-December 2014.
- University of Santiago de Compostela, Spain. Tutor: Dr. Adriana Gewerc. Project: "Diagrammatic and linguistic representations in the learning of Logic: use of specific software in university classrooms of the National University of Cordoba". January-March 2014.
- University of Cordoba, Computer Science and Numerical Analysis Department. KDIS Group (Knowledge Discovery and Intelligent Systems), Spain. Project: "Diagrammatic and linguistic representations in the learning of Logic: use of specific software in university classrooms of the National University of Cordoba". Tutor: Dr. Sebastián Ventura Souto. January 2014.
- University of Santiago de Compostela, Spain. Tutor: Dr. Adriana Gewerc. Project: "Diagrammatic and linguistic representations in the learning of Logic: use of specific software in university classrooms of the National University of Cordoba". November 2011 -March 2012.

## **Scholarships**

University of Texas at Dallas Teaching Assistantship, Full Ph.D. Scholarship (2021-2022), U.S.A.

National Scientific and Technical Research Council, Postdoctoral Fellowship (April 2017 – May 2019), Argentina. Research project: "Learning of code in Argentine primary school children: an analysis from the Vygotskian perspective".

National Scientific and Technical Research Council, Doctoral Scholarship (April 2012 - March 2017), Argentina. Research project: "Diagrammatic and linguistic representations in the learning of Logic: use of specific software in classrooms of Higher Education Institutions".

Secretariat of Science and Technology, National University of Cordoba, Doctoral Scholarship (2011-2012), Argentina.

AUIP (Ibero-American Postgraduate University Association) Scholarship for Research Stay in Spain, (2014-2015), Spain.

Scholarship for Study Mission to Brazil, "Associated Postgraduate Centers - Brazil & Argentina Program", National University of Cordoba, (2014), Argentina.

Spanish Agency for Development Cooperation (AECID), University of Santiago de Compostela, Scholarship for initiation in research (2010-2011), Spain. Research project: "University in the Knowledge Society. Institutional strengthening of areas dedicated to university teaching with new technologies".

## **Awards**

Doctoral Dissertation Publication, School of Philosophy and Humanities. National University of Cordoba, (2016), Argentina.

First Guard of Ceremonies Flag, School of Philosophy and Humanities. National University of Cordoba, (2009-2010), Argentina.

University Award for Academic Excellence (Diploma with Honorable Mention corresponding to the Educational Sciences B.A.), National University of Cordoba, 2009, Argentina.

## **Languages**

English (Proficient)

Spanish (Native)

## Academic References

**Dr. Adriana Gewerc**

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Titular Professor at Santiago de Compostela University, Spain

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Professor at Social Data Analytics and Research Master Program, University of Texas at Dallas, U.S.A.

**Dr. Diego Letzen**

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Titular Professor at National University of Cordoba, Argentina.

**Dr. Joel Armando**

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Learning Innovation Manager at Blackboard, United Kingdom. Former Executive Director at Educational Technology Area, National University of Cordoba, Argentina.