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Current professional activity

Prof. Dr. José Domingo Villarroel is a full professor at the Department of Didactics of Mathematics and Experimental and Social Sciences (University of the Basque Country, UPV/EHU).

Prof. Dr. José Domingo Villarroel has a permanent position since 2013 in the Faculty of Education Bilbao and his teaching activity, both in undergraduate and postgraduate levels, is related to the field of science education.

Experience in management

Vice-Dean of International relation at the University of the Basque Country. Faculty of Education in Bilbao (02/05/2013-->24/05/2018).

Deputy director of international relations at the University of the Basque Country. University College of Teacher Training in Vitoria (15/05/2008--> 18/09/2011)

Previous professional activity

Science and mathematics teacher at Secondary and Primary Education (12/9/1991-12/10/2006).

Academic background

2002 - PhD in Science Education. Thesis Advisor: Dr. Alfredo Goñi. The University of The Basque Country (Spain).

Graduated in Science (Biology) in the Faculty of Science and Technology. University of the Basque Country.

Editor

Editor-in-chief of the IKASTORRATZA. e-journal on Didactics journal (ISSN: 1988-5911).

Former member of the editorial board of the Biochemistry and Molecular Biology Education journal, ISSN:1539-3429, (from 08-02-2019 to 03-06-2023).

Research

Papers published in indexed journals

- Villarroel, J. D., Antón, A., Nuño, T. & Zuazagoitia, D. (2024). The joint influence of the variables educational level and gender on children's drawings of the plant world. *Heliyon*. DOI: 10.1016/j.heliyon.2024.e24272
- Rodríguez Loinaz, G., Antón, A., Etxabe Urbietia, J. M., & Villarroel Villamor, J. D. (2023). Influencia del conocimiento y la preocupación ambiental en la conducta y la toma de decisiones pro-ambientales. *Ápice. Revista de Educación Científica*, 7(1). <https://doi.org/10.17979/arec.2023.7.1.9579>
- Zaballa, I., Merino, M., & Villarroel, J. D. (2022). Children's Drawing of Plant Life in the Time of COVID-19: An Analysis of the Changes Related to Content and Colour over a Two-Year Period. *Children*, 9(6):862. <https://doi.org/10.3390/children9060862>
- Villarroel, J. D., Merino, M., & Antón, Á. (2023). Young Children's Spontaneous Use of Isometric and Non-Isometric Symmetries: A Study Regarding Their Unprompted Depictions of Plant Life. *Journal of Biological Education*, 57(5), 971-985. DOI: 10.1080/00219266.2021.2006272
- Barrutia, O., Ruíz-González, A., Villarroel, J.D. & Díez, J.R. (2021). Primary and Secondary Students' Understanding of the Rainfall Phenomenon and Related Water Systems: a Comparative Study of Two Methodological Approaches. *Research in Science Education*, 51(2), 823-844. DOI: 10.1007/s11165-019-9831-2
- Garibi JA, Antón A, & Villarroel JD. (2021). Information about Human Evolution: An Analysis of News Published in Communication Media in Spanish between 2015 and 2017. *Publications*, 9(3),28. DOI: 10.3390/publications9030028
- Zaballa, I., Merino, M., & Villarroel, J. D. (2021). Children's Pictorial Expression of Plant Life and Its Connection with School-Based Greenness. *Sustainability* 13(9), 4999. DOI: 10.3390/su13094999.
- Garcia, M., Antón, A. & Villarroel, J.D. (2021). Collagen in the media: An analysis of news published between 2016 and 2018. *Biochemistry and Molecular Biology Education*, 49(2), 242-250. DOI: 10.1002/bmb.21450
- Rojo Robas, V.; Madariaga, J.M. & Villarroel, J.D. (2020). Secondary Education Students' Beliefs about Mathematics and Their Repercussions on Motivation. *Mathematics*, 8, 368. DOI: 10.3390/math8030368
- Villanueva; X.; Villarroel, J.D. & Antón, A. (2019). Young children's drawings of plant world: a cohort study analysing pictorial content. *Journal of Biological Education*, 55 (3), 225-237. DOI: 10.1080/00219266.2019.1679656
- Garibi, J.A., Antón, A. & Villarroel, J.D. (2019). The information about human evolution: An analysis of news published in Spanish communication media between 2015 and 2017. Sage Submissions. Preprint. DOI:

10.31124/advance.8088221.v1

- Villarroel, J. D., Merino, M., & Antón, Á. (2019). Symmetrical Motifs in Young Children's Drawings: A Study on Their Representations of Plant Life. *Symmetry*, 11(1), 26. DOI: 10.3390/sym11010026
- Villarroel, J. D., Antón, A., Zuazagoitia, D., & Nuño, T. (2018). A Study on the Spontaneous Representation of Animals in Young Children's Drawings of Plant Life. *Sustainability*, 10(4), 1000. DOI: 10.3390/su10041000
- Villanueva, X., Villarroel, J. D., & Antón, A. (2018). Environmental Awareness and Its Relationship with the Concept of the Living Being: A Longitudinal Study. *Sustainability* (2071-1050), 10(7). DOI: 10.3390/su10072358
- Villarroel, J. D., Antón, A., Zuazagoitia, D., & Nuño, T. (2018). Young children's understanding of plant life: a study exploring rural-urban differences in their drawings. *Journal of Biological Education*, 52(3), 331-341. DOI: 10.1080/00219266.2017.1385505
- Rojo; V. ; Villarroel, J.D. & Madariaga, J.M. (2018). The affective domain in learning mathematics according to students' gender. *Revista Latinoamericana de Investigación en Matemática Educativa*, 21(2), 183-202. DOI: 10.12802/relime.18.2123
- Villarroel, J. D., & Villanueva, X. (2017). A Study Regarding the Representation of the Sun in Young Children's Spontaneous Drawings. *Social Sciences*, 6(3), 95.
- Villarroel, J. D., Antón, Á. Zuazagoitia, D., & Nuño, T. (2017). Young children's environmental judgement and its relationship with their understanding of the concept of living things. *Environmental & Socio-economic Studies*, 5(1), 1-10.
- Villarroel, J. D., & Sanz Ortega, O. (2017). A study regarding the spontaneous use of geometric shapes in young children's drawings. *Educational Studies in Mathematics*, 94(1), 85- 95.
- Villarroel J.D. & Zuazagoitia, D. (2016). Villarroel, J. D., & Zuazagoitia, D. (2016). The phenomenon of brine rejection: a practical proposal for prospective primary teacher training. *Educación Química*, 27(3), 205-208.
- Zuazagoitia, D. & Villarroel J.D. (2016). Studying the importance of soil organic matter: An educational proposal for secondary education. *Educación Química*, 27(1), 37-42. DOI: 10.1016/j.eq.2015.09.007
- Villarroel, J. D., Nuño, T., Antón, A., & Zuazagoitia, D. (2016). Un estudio en torno a comprensión infantil del mundo vegetal a través de sus dibujos [A study regarding young children's understanding of the plant world through their drawings]. *ENSAYOS. Revista de la Facultad de Educación de Albacete*, 31(2), 153-168.
- Villarroel, J.D. (2016). Young Children's Drawings of Plant Life: A Study Concerning the

Use of Colours and Its Relationship with Age. *Journal of Biological Education*, 50(1), 41-53, DOI: 10.1080/00219266.2014.1002519

- Villamor, J. D. V., & Rey-Baltar, D. Z. (2015). El impacto de la fusión de los icebergs en el nivel del mar. *Revista Eureka sobre Enseñanza y Divulgación de las Ciencias*, 12(1), 178-185.
- Gasco, J. & Villamor, J. D. V. (2014). La motivación en la resolución de problemas aritmético-algebraicos. Un estudio con alumnado de educación secundaria. *Electronic Journal of Research in Education Psychology*, 12(32), 83-106.
- Villarroel, J.D. & Infante, G. (2014). Early understanding of the concept of living things: an examination of young children's drawings of plant life. *Journal of Biological Education*, 48(3), 119-126. DOI: 10.1080/00219266.2013.837406
- Villarroel, J.D. & Gasco, J. (2014). Different Procedures for Solving Mathematical Word Problems in High School. *International Education Studies* 7(7), 77-84. DOI:10.5539/ies.v7n7p77
- Villarroel, J.D. (2013). Environmental judgment in early childhood and its relationship with the understanding of the concept of living beings. *SpringerPlus*, 2, 87 DOI:10.1186/2193-1801-2-87. DOI:10.1186/2193-1801-2-87
- Villarroel, J.D. & Ros, I. (2013). Young Children's Conceptions of Rainfall: A Study of Their Oral and Pictorial Explanations. *International Education Studies*, 6(8), 1-15
- Villarroel, J.D. (2012). An early understanding of mechanism of rainfall: a study examining the differences between young minority immigrant and native-born children. *Problems of Education in the 21st Century*, 47(47), 152-164.
- Villarroel, J.D., Miñon, C., Nuño, T. (2011). The origin of counting: A study of the early meanings of 'one', 'two' and 'three' among Basque- and Spanish-speaking children. *Educational Studies in Mathematics*, 1(76), 345-361.
- Camino, I., Vizkarra, M.T.; Aristizabal, P. & y Villarroel, J.D. (2011). Diziplinarteko lanaren esperientzia Gasteizko Irakasleen Unibertsitate Eskolan: irakaslearen lanbidea. *Tantak: Euskal Herriko Unibertsitateko hezkuntza aldizkaria*, 23(2), 119-138.
- Infante, G., Goñi, A. & Villarroel, J.D. (2011). Actividad física, autoconcepto físico y general. *Revista de Psicología del Deporte*, 20(2), 429-444.
- Villarroel, J.D. (2009). Origen y desarrollo del pensamiento numérico: Una perspectiva multidisciplinar. *Revista Electrónica de Investigación Psicoeducativa y Psicopedagógica*, 7(1), 130-165.
- Villarroel, J.D., Nuño, T. & Goñi, A. (2009). The origin of numerical concepts: early meanings of one, two, and three among Basque- and Spanish- speaking children. *Problems of education in the 21st century*, 10(10), 109-123.
- Villarroel, J.D. (2008). The subjective computer experience of university students. *Problems of education in the 21st century*, 5(5), 118-128.

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- Villarroel, J.D. & Nuño, T. (2008). Umeen zenbatze ekintzari buruzko perspektiba berriak: Piagetengandik haratago. *Uztaro*, 65, 55-71.
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- Villarroel, J.D. (2007). Nola laguntzen dute objektu manipulagarriek matematikaren irakaskuntzan? *Sigma*, 30, 15-25.
- Goñi, A. & Villarroel, J.D. (2005). La comprensión de las propiedades físicas de la materia: motivación y cambio conceptual. *Revista de Educación en Ciencias. Journal of Science Education*, 6(1), 12-15.
- Villarroel, J.D. (2004). Las nuevas tecnologías, una fuente de motivación. *Cuadernos de Pedagogía*, 332, 37-39.
- Villarroel, J.D. (2000). Relación entre motivaciones y cambio conceptual en el aprendizaje de las propiedades físicas de la materia. *Revista de Psicodidáctica*, 10, 17-26.
- Villarroel, J.D. (1999). Conducta interpersonal y rendimiento académico. Una aproximación al estudio de su relación en el aula. *BIO-Revista del colegio oficial de biólogos*, 16, 25-28.
- Izagirre, N., Cuende, M., Villarroel, J.D. & de la Rúa, C (1992). Indicadores de estrés a nivel dentario en la población medieval de los castros de lastra. *Munibe. Antropología-Arqueología*, 1(8), 137-143.
- Villarroel, J.D., Izagirre, N., & de la Rúa, C (1992). Interpretación de las variantes anatómicas del cráneo humano. *Munibe. Antropología-Arqueología*, 1(8), 217-221.

Some ISI Proceedings Papers

- Gasco, J., Villarroel, J.D., & Goñi, A. (2014). Differences in the Use of Learning Strategies in Mathematics in 8th and 9th grade. *Procedia-Social and Behavioral Sciences* 116, 1040-1043.
- Gasco, J., Villarroel, J.D., & Goñi, A. (2014). Sex Differences in Mathematics Motivation in 8th and 9th Grade. *Procedia-Social and Behavioral Sciences* 116, 1026-1031.
- Villarroel, J.D. & Infante, G. (2012). A study of gender differences within the content of young children's drawings regarding their understanding of the rainfall

phenomenon. *Advances in Education Research Journal* 3,13-18.

Villarroel, J.D. & Ruiz, Andrea (2012). The understanding of the marine environment: a preliminary study among primary school students. *Advances in Education Research Journal*, 3, 19-22.

Gasco, J. & Villarroel, J.D. (2012). Algebraic problem solving and learning strategies in compulsory secondary education. *Procedia: Social & Behavioral Sciences*, 46, 612- 616.

Villarroel, J.D., Nuño, T., Pérez de Eulate, L., Etxabe, J. M., Díez, J. R. & Ruipérez, T. (2012). A study of the relationship between the understanding of the basic genetic concepts and perspectives regarding genetically modified products and local production among undergraduate and High School students. *Procedia: Social & Behavioral Sciences*, 46, 204-208.

Villarroel, J.D., Vizcarra, M.T., Camino, I. & Aristizabal, M.P. (2011). International Mobility and Psychological Factors: A Related Study for Teacher Training. *Procedia: Social & Behavioral Sciences*, 30(30), 2124-2128.

BOOKS

Maiz, M. I., Castaño, C. M., Palacio, G. J., Villarroel, J.D. (2008). *Práctica educativa en entornos web 2.0*. Madrid: Síntesis. ISBN: 978-84-9756-571-4. (In Spanish).