

Algunos proyectos destacados y en curso del Grupo GRIAL

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Resumen

Webinar con la presentación de algunos proyectos destacados del Grupo GRIAL (UIC 081) [1, 2] de la Universidad de Salamanca en el Conversatorio “Investigación, Desarrollo e Innovación de TIC en Educación” organizado por la Universidad Católica de Santa María (Arequipa, Perú).

La ponencia se organizó en los siguientes apartados: 1) presentación del Grupo GRIAL y 2) Presentación de tres proyectos destacados (W-STEM; OpenGame y RoboSTEAM).

Palabras clave

TIC en Educación; Tecnologías para el aprendizaje; Investigación; GRIAL; W-STEM; OpenGame; RoboSTEAM.

1. Presentación del Grupo GRIAL

Grupo interdisciplinar, compuesto por miembros permanentes que provienen de distintas áreas de conocimiento, como la ingeniería del software, las ciencias de la computación, la educación, las ciencias de la información, las ciencias sociales, etc.

La actividad del Grupo GRIAL se orienta a:

- Realización de proyectos de I+D+i tanto de forma individual como en consorcio con otras instituciones y/o grupos.
- Formación bajo demanda.
- Servicios bajo demanda de otras instituciones y empresas.

Las principales líneas de investigación del grupo GRIAL son:

- Analítica visual [3-15].
- Calidad y evaluación en educación [16-24].
- Ciencias de la información [25-34].
- Ecosistemas tecnológicos [35-49].
- Educación médica [50-53].
- Gestión estratégica de conocimiento y tecnología [54-69].
- Humanidades Digitales [70-73].
- Ingeniería web y arquitecturas software [11, 74-93].
- Metodologías eLearning [94-105].
- Responsabilidad social e inclusión [106-118].
- Sistemas de aprendizaje interactivos [91, 119-126].
- Tecnologías del aprendizaje [6, 7, 39, 40, 44, 48, 127-155].
- TIC e Innovación educativa [116-118, 156-167].

Muchos son los proyectos y contratos del Grupo, como por ejemplo, entre otros:

- Virtual Alliances for Learning Society (VALS) funded by LLP Sub-Programme Erasmus - Knowledge Alliances. 2013-2015. <http://virtualalliances.eu> [168-177].
- netWorked Youth Research for Empowerment in the Digital society (WYRED) – funded by European Union H2020 Programme. 2016-2019. <https://wyredproject.eu/> [106, 178-183].
- *a Digital Ecosystem Framework for an Interoperable NEtwork-based Society* (DEFINES). Financiado por el Ministerio de Economía y Competitividad, en su Convocatoria 2016 de Proyectos I+D+i, dentro del Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación 2013-2016 (Ref. TIN2016-80172-R). 2017-2020 [184-191].
- HIPPOCAMPUS - Promoting Mental Health and Wellbeing among Young People through Yoga. Erasmus + KA2 – Cooperation and Innovation for Good Practices. Strategic Partnerships for Youth. (Ref. 2017-2-ES02-KA205-009942) 2017-2019 [192].
- TACCLE3 - Coding funded by European Union. Erasmus + KA2. 2015-2017. <http://www.tackle3.eu/> [193-201].
- netWorked Youth Research for Empowerment in the Digital society (WYRED) – funded by European Union H2020 Programme. 2016-2019. <https://wyredproject.eu/> [106, 178-182].
- TE-CUIDA, propuesta de un Ecosistema TEcnológico para apoyo a CUIDAdores asistenciales. Consejería de Educación de la Junta de Castilla y León. Orden de 28 de junio de 2017. Subvenciones del programa de apoyo a proyectos de investigación cofinanciadas por el Fondo Europeo de Desarrollo Regional. Resolución ORDEN EDU/986/2017, 8 de noviembre. 2017-2019 [107, 108, 202-208]
- Contrato con la Cátedra UNESCO de Gestión y Política Universitaria de la Universidad Politécnica de Madrid para el desarrollo del Barómetro de Empleo y Empleabilidad Universitaria [125, 209-215].

2. Proyectos destacados

Pero de forma explícita se presentan los siguientes proyectos:

- W-STEM - Building the future of Latin America: engaging women into STEM – funded by European Union ERASMUS + Capacity-building in Higher Education Call for proposals EAC/A05/2017. 2019-2021. <https://wstemproject.eu/> [116, 216-223].
- OpenGame - Promoting Open Education through Gamification. <https://opengame-project.eu/> [224].
- ROBOSTEAM - Integrating steam and computational thinking development by using robotics and physical devices. Funded by European Union. Erasmus + KA2 – Cooperation and Innovation for Good Practices. Strategic Partnerships for school education. 2018-2020. <http://robosteamproject.eu/> [225-228].

Enlace a la presentación

<https://bit.ly/2YLEGUA>

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Referencias

- [1] F. J. García-Peñalvo, M. J. Rodríguez-Conde, R. Therón, A. García-Holgado, F. Martínez-Abad y A. Benito-Santos, "Grupo GRIAL," *IE Comunicaciones. Revista Iberoamericana de Informática Educativa*, no. 30, pp. 33-48, 2019.
- [2] Grupo GRIAL, "Producción Científica del Grupo GRIAL de 2011 a 2019," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, GRIAL-TR-2019-010, 2019. Disponible en: <https://bit.ly/30l9mLh>. doi: 10.5281/zenodo.2821407.
- [3] J. García, F. J. García-Penalvo, R. Therón y P. Ordóñez de Pablos, "Usability Evaluation of a Visual Modelling Tool for OWL Ontologies," *Journal of Universal Computer Science*, vol. 17, no. 9, pp. 1299-1313, 2011. doi: 10.3217/jucs-017-09-1299.
- [4] J. Garcia, A. G. Torres, D. A. G. Aguilar, R. Theron y F. J. G. Penalvo, "A Visual Analytics Tool for Software Project Structure and Relationships among Classes," en *Smart Graphics, Proceedings*, vol. 5531, A. Butz, B. Fisher, M. Christie, A. Kruger, P. Olivier y R. Theron, Eds. Lecture Notes in Computer Science, pp. 203-212, 2009.
- [5] F. J. García-Peñalvo, "Issue on visual analytics," *Journal of Information Technology Research*, vol. 8, no. 2, pp. iv-vi, 2015.
- [6] D. A. Gómez-Aguilar, F. J. García-Peñalvo y R. Therón, "Analítica Visual en eLearning," *El Profesional de la Información*, vol. 23, no. 3, pp. 236-245, 2014. doi: 10.3145/epi.2014.may.03.
- [7] D. A. Gómez-Aguilar, Á. Hernández-García, F. J. García-Peñalvo y R. Therón, "Tap into visual analysis of customization of grouping of activities in eLearning," *Computers in Human Behavior*, vol. 47, pp. 60-67, 2015. doi: 10.1016/j.chb.2014.11.001.
- [8] A. González-Torres, F. J. García-Peñalvo y R. Therón, "How evolutionary visual software analytics supports knowledge discovery," *Journal of Information Science and Engineering*, vol. 29, no. 1, pp. 17-34, 2013.
- [9] A. González-Torres, F. J. García-Peñalvo y R. Therón, "Human-computer interaction in evolutionary visual software analytics," *Computers in Human Behavior*, vol. 29, no. 2, pp. 486-495, Mar 2013. doi: 10.1016/j.chb.2012.01.013.
- [10] A. González-Torres, F. J. García-Peñalvo y R. Therón, "A Framework for the Evolutionary Visual Software Analytics Process," en *Information Systems, E-learning, and Knowledge Management Research. 4th World Summit on the Knowledge Society, WSKS 2011, Mykonos, Greece, September 21-23, 2011. Revised Selected Papers (Mykonos, Greece, 21-23 September 2011)*, M. D. Lytras, D. Ruan, R. Tennyson, P. Ordoñez de Pablos, F. J. García-Peñalvo y L. Rusu, Eds. Communications in Computer and Information Science, no. 278, pp. 439-447, Berlin: Springer Verlag, 2013. doi: 10.1007/978-3-642-35879-1_53.
- [11] A. González-Torres, F. J. García-Peñalvo, R. Therón-Sánchez y R. Colomo-Palacios, "Knowledge discovery in software teams by means of evolutionary visual software analytics," *Science of Computer Programming*, vol. 121, pp. 55–74, 2016. doi: 10.1016/j.scico.2015.09.005.
- [12] A. González-Torres, R. Therón, F. J. García-Peñalvo, M. Wermelinger y Y. Yu, "Maleku: An evolutionary visual software analytics tool for providing insights into software evolution," en *Proceedings of the 27th IEEE International Conference on Software Maintenance – ICSM 2011 (Williamsburg, VA, USA, September 25 – 30, 2011)*, A. Marcus, J. R. Cordy y P. Tonella, Eds. pp. 594-597, EEUU: IEEE CS Press, 2011. doi: 10.1109/ICSM.2011.6080838.
- [13] F. J. García-Peñalvo, P. Ordóñez de Pablos, J. García y R. Therón, "Using OWL-VisMod through a decision-making process for reusing OWL ontologies," *Behaviour & Information Technology*, vol. 33, no. 5, pp. 426-442, 2014. doi: 10.1080/0144929X.2012.709538.
- [14] F. J. García-Peñalvo, R. Colomo-Palacios, J. García y R. Therón, "Towards an ontology modeling tool. A validation in software engineering scenarios," *Expert Systems with Applications*, vol. 39, no. 13, pp. 11468-11478, 2012. doi: 10.1016/j.eswa.2012.04.009.

- [15] A. Benito Santos, R. Therón, A. Losada, J. E. Sampaio y C. Lago-Penas, "Data-Driven Visual Performance Analysis in Soccer: An Exploratory Prototype," *Frontiers in Psychology*, vol. 9, art. 2416, 2018. doi: 10.3389/fpsyg.2018.02416.
- [16] M. J. Rodríguez-Conde, F. Martínez-Abad y S. Olmos-Migueláñez, "Assessment of information skills in secondary education: A causal model," *Cultura y Educación*, vol. 25, no. 3, pp. 361-373, 2013. doi: 10.1174/113564013807749687.
- [17] M. J. Rodríguez-Conde, S. Olmos-Migueláñez, B. García-Riaza, A. B. González-Rogado y F. J. García-Peñalvo, "Students' Active Role on the Assessment of Learning Results in Blended-Learning Environments in Engineering in Spain," en *Information Systems, E-learning, and Knowledge Management Research. 4th World Summit on the Knowledge Society, WSKS 2011, Mykonos, Greece, September 21-23, 2011. Revised Selected Papers (Mykonos, Greece, 21-23 September 2011)*, M. D. Lytras, D. Ruan, R. Tennyson, O. Ordoñez de Pablos, F. J. García-Peñalvo y L. Rusu, Eds. Communications in Computer and Information Science, no. CCIS 278, pp. 408-415, Berlin, Heidelberg: Springer Verlag, 2013. doi: 10.1007/978-3-642-35879-1_49.
- [18] A. B. González-Rogado, M. J. Rodríguez-Conde, S. Olmos-Migueláñez, M. Borham y F. J. García-Peñalvo, "Experimental evaluation of the impact of b-learning methodologies on engineering students in Spain," *Computers in Human Behavior*, vol. 29, no. 2, pp. 370-377, 2013. doi: 10.1016/j.chb.2012.02.003.
- [19] A. B. González-Rogado, M. J. Rodríguez-Conde, S. Olmos-Migueláñez, M. Borham y F. J. García-Peñalvo, "Key factors for determining student satisfaction in engineering: A regression study," *International Journal of Engineering Education (IJEE)*, vol. 30, no. 3, pp. 576-584, 2014.
- [20] F. Martínez-Abad, S. Olmos-Migueláñez y M. J. Rodríguez-Conde, "Evaluación de un programa de formación en competencias informacionales para el futuro profesorado de E.S.O," *Revista de Educación*, no. 370, pp. 45-70, 2015. doi: 10.4438/1988-592X-RE-2015-370-296.
- [21] S. Olmos Migueláñez y M. J. Rodríguez Conde, "El profesorado universitario ante la evaluación del aprendizaje," *ESE- Estudios sobre Educación*, vol. 23, no. 1, pp. 181-202, 2011.
- [22] H. Barbosa y F. J. García-Peñalvo, "Importance of Online Assessment in the E-Learning Process," en *Proceedings of the 6th International Conference on Information Technology Based Higher Education and Training - ITHET 2005. (Santo Domingo, Dominican Republic, July 7-9, 2005)* pp. F3B-1-F3B-6: IEEE CS-Press, 2005.
- [23] H. Barbosa León, F. J. García-Peñalvo, M. J. Rodríguez-Conde, E. M. Morales-Morgado y P. Ordóñez de Pablos, "Adaptive assessments using open specifications," *International Journal of Distance Education Technologies (IJDET)*, vol. 10, no. 4, pp. 56-71, 2012. doi: 10.4018/jdet.2012100105.
- [24] H. G. Barbosa Leon, F. J. García-Peñalvo y M. J. Rodríguez-Conde, "Defining adaptive assessments. Construction of adaptive assessments based in the learning style of the students," en *Proceedings of Third International Conference on Web Information Systems and Technologies Society, e-Business and e-Government / e-Learning Volume - WEBIST 2007 (Barcelona, Spain, March 3 - 6, 2007)*, J. Filipe y J. Cordeiro, Eds. pp. 409-414, Portugal: INSTICC Press, 2007.
- [25] T. Ferreras-Fernández, J. A. Merlo-Vega y F. J. García-Peñalvo, "Impact of Scientific Content in Open Access Institutional Repositories. A case study of the Repository Gredos," en *Proceedings of the First International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'13) (Salamanca, Spain, November 14-15, 2013)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 357-363, New York, NY, USA: ACM, 2013. doi: 10.1145/2536536.2536590.
- [26] T. Ferreras-Fernández, J. A. Merlo-Vega y F. J. García-Peñalvo, "Visibilidad de la literatura gris científica a través de repositorios. El caso de las tesis doctorales en GREDOs," presentado en XV Workshop de REBIUN sobre proyectos digitales y VI Jornadas de OS-Repositorios (11-13 de marzo de 2015), Córdoba, Spain, 2015.

- [27] F. J. García-Peñalvo, J. A. Merlo-Vega, T. Ferreras-Fernández, A. Casaus-Peña, L. Albás-Aso y M. L. Atienza-Díaz, "Qualified Dublin Core Metadata Best Practices for GREDOS," *Journal of Library Metadata*, vol. 10, no. 1, pp. 13-36, 2010. doi: 10.1080/19386380903546976.
- [28] C. López, F. García-Peñalvo y P. Pernías, "Desarrollo de Repositorios de Objetos de Aprendizaje a través de la Reutilización de los Metadatos de una Colección Digital: De Dublin Core a IMS," *RED. Revista de Educación a Distancia*, vol. IV, no. monográfico II, 2005.
- [29] T. Ferreras-Fernández, J. A. Merlo-Vega y F. J. García-Peñalvo, "Science 2.0 supported by Open Access Repositories and Open Linked Data," en *Proceedings of the First International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'13) (Salamanca, Spain, November 14-15, 2013)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 331-332, New York, NY, USA: ACM, 2013. doi: 10.1145/2536536.2536586.
- [30] T. Ferreras-Fernández, "Visibilidad e impacto de la literatura gris científica en repositorios institucionales de acceso abierto. Estudio de caso bibliométrico del repositorio Gredos de la Universidad de Salamanca," PhD, Programa de Doctorado en Formación en la Sociedad del Conocimiento, Universidad de Salamanca, Salamanca, España, 2016. Disponible en: <https://goo.gl/rrNeEJ>.
- [31] T. Ferreras-Fernández, F. J. García-Peñalvo, J. A. Merlo-Vega y H. Martín-Rodero, "Providing open access to PhD theses: Visibility and citation benefits," *Program: Electronic library and information systems*, vol. 50, no. 4, pp. 399-416, 2016. doi: 10.1108/PROG-04-2016-0039.
- [32] T. Ferreras-Fernández, H. Martín-Rodero, F. J. García-Peñalvo y J. A. Merlo-Vega, "The Systematic Review of Literature in LIS: An approach," en *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) (Salamanca, Spain, November 2-4, 2016)*, F. J. García-Peñalvo, Ed. pp. 291-298, New York, NY, USA: ACM, 2016. doi: 10.1145/3012430.3012531.
- [33] L. I. González-Pérez, L. D. Glasserman Morales, M. S. Ramírez-Montoya y F. J. García-Peñalvo, "Repositorios como soportes para diseminar experiencias de innovación educativa," en *Innovación Educativa. Investigación, formación, vinculación y visibilidad*, M. S. Ramírez-Montoya y J. R. Valenzuela González, Eds. pp. 259-272, Madrid, España: Síntesis, 2017.
- [34] L. I. González-Pérez, M. S. Ramírez-Montoya y F. J. García-Peñalvo, "Modelo de evaluación de experiencia de usuario para Repositorios Institucionales," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-009, 2019. Disponible en: <https://goo.gl/VBxyHj>. doi: 10.5281/zenodo.2602024.
- [35] F. J. García-Peñalvo, "Ecosistemas Tecnológicos," *IEEE VAEP-RITA*, vol. 3, no. 1, pp. 36-37, 2015.
- [36] F. J. García-Peñalvo, "Ecosistemas Tecnológicos: Innovando en la Educación Abierta," presentado en Programa de la Maestría en Tecnología Educativa. Escuela de Humanidades y Educación, Tecnológico de Monterrey, Monterrey, Nuevo León, México, 17 de enero de 2017, 2017. Disponible: <https://goo.gl/zRma4d>. doi: 10.13140/RG.2.2.21822.28489.
- [37] F. J. García-Peñalvo *et al.*, "Mirando hacia el futuro: Ecosistemas tecnológicos de aprendizaje basados en servicios," en *La Sociedad del Aprendizaje. Actas del III Congreso Internacional sobre Aprendizaje, Innovación y Competitividad. CINAIC 2015 (14-16 de Octubre de 2015, Madrid, España)*, Á. Fidalgo Blanco, M. L. Sein-Echaluce Lacleta y F. J. García-Peñalvo, Eds. pp. 553-558, Madrid, Spain: Fundación General de la Universidad Politécnica de Madrid, 2015.
- [38] F. J. García-Peñalvo *et al.*, "Enhancing Education for the Knowledge Society Era with Learning Ecosystems," en *Open Source Solutions for Knowledge Management and Technological Ecosystems*, F. J. García-Peñalvo y A. García-Holgado, Eds. Advances

- in Knowledge Acquisition, Transfer, and Management (AKATM), pp. 1-24, Hershey PA, USA: IGI Global, 2017. doi: 10.4018/978-1-5225-0905-9.ch001.
- [39] F. J. García-Peñalvo *et al.*, "Learning services-based technological ecosystems," en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves y M. C. Felgueiras, Eds. pp. 467-472, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808650.
- [40] A. García-Holgado y F. J. García-Peñalvo, "The evolution of the technological ecosystems: An architectural proposal to enhancing learning processes," en *Proceedings of the First International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'13) (Salamanca, Spain, November 14-15, 2013)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 565-571, New York, NY, USA: ACM, 2013. doi: 10.1145/2536536.2536623.
- [41] A. García-Holgado y F. J. García-Peñalvo, "Análisis de integración de soluciones basadas en software como servicio para la implantación de ecosistemas tecnológicos corporativos," en *Avances en Informática y Automática. Séptimo Workshop*, J. Cruz-Benito, A. García-Holgado, S. García-Sánchez, D. Hernández-Alfageme, M. Navarro-Cáceres y R. Vega-Ruiz, Eds. pp. 55-72, Salamanca: Departamento de Informática y Automática de la Universidad de Salamanca, 2013.
- [42] A. García-Holgado y F. J. García-Peñalvo, "Knowledge management ecosystem based on Drupal platform for promoting the collaboration between public administrations," en *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'14) (Salamanca, Spain, October 1-3, 2014)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 619-624, New York, NY, USA: ACM, 2014. doi: 10.1145/2669711.2669964. 2014.
- [43] A. García-Holgado y F. J. García-Peñalvo, "Patrón arquitectónico para la definición de ecosistemas de eLearning basados en desarrollos open source," en *Actas del XVI Simposio Internacional de Informática Educativa (SIIIE'14). Acceso masivo y universal para un aprendizaje a lo largo de la vida (Logroño, La Rioja, España, 12-14 de noviembre, 2014)*, J. L. Sierra Rodríguez, J. M. Dodero Beardo y D. Burgos, Eds. pp. 137-142, 2014.
- [44] A. García-Holgado y F. J. García-Peñalvo, "Architectural pattern for the definition of eLearning ecosystems based on Open Source developments," en *Proceedings of 2014 International Symposium on Computers in Education (SIIIE), Logrono, La Rioja, Spain, 12-14 Nov. 2014*, J. L. Sierra-Rodríguez, J. M. Dodero-Beardo y D. Burgos, Eds. pp. 93-98, USA: Institute of Electrical and Electronics Engineers, 2014. doi: 10.1109/SIIIE.2014.7017711.
- [45] A. García-Holgado y F. J. García-Peñalvo, "Estudio sobre la Evolución de las Soluciones Tecnológicas para Dar Soporte a la Gestión de la Información," Grupo de investigación GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2015-001, 2015. Disponible en: <https://goo.gl/NKRMKX>. doi: 10.13140/RG.2.1.5176.2727.
- [46] A. García-Holgado y F. J. García-Peñalvo, "Architectural pattern to improve the definition and implementation of eLearning ecosystems," *Science of Computer Programming*, vol. 129, pp. 20-34, 2016. doi: 10.1016/j.scico.2016.03.010.
- [47] A. García-Holgado, F. J. García-Peñalvo, Á. Hernández-García y F. Llorens-Largo, "Analysis and Improvement of Knowledge Management Processes in Organizations Using the Business Process Model Notation," en *New Information and Communication Technologies for Knowledge Management in Organizations. 5th Global Innovation and Knowledge Academy Conference, GIKA 2015, Valencia, Spain, July 14-16, 2015, Proceedings*, D. Palacios-Marqués, D. Ribeiro Soriano y K. H. Huarng, Eds. Lecture Notes in Business Information Processing, no. 222, pp. 93-101, Switzerland: Springer International Publishing, 2015. doi: 10.1007/9783-319-22204-2_9.
- [48] A. García-Holgado, F. J. García-Peñalvo y M. J. Rodríguez-Conde, "Definition of a technological ecosystem for scientific knowledge management in a PhD Programme,"

- en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves y M. C. Felgueiras, Eds. ACM International Conference Proceeding Series (ICPS), pp. 695-700, New York, NY, USA: ACM, 2015. doi: 10.1145/2808580.2808686
- [49] F. J. García-Péñalvo, "Ecosistemas tecnológicos universitarios," en *UNIVERSITIC 2017. Análisis de las TIC en las Universidades Españolas*, J. Gómez, Ed. pp. 164-170, Madrid, España: Crue Universidades Españolas, 2018.
- [50] N. Gómez del Río, C. S. González-González, R. Martín-González, V. Navarro-Adelantado, P. Toledo-Delgado y F. J. García-Péñalvo, "Effects of a Gamified Educational Program in the Nutrition of Children with Obesity," *Journal of Medical Systems*, vol. 43, no. 7, art. 198, 2019. doi: 10.1007/s10916-019-1293-6.
- [51] S. González Izard, J. A. Juanes Méndez, P. Ruisoto y F. J. García-Péñalvo, "NextMed: How to enhance 3D radiological images with Augmented and Virtual Reality," en *TEEM'18 Proceedings of the Sixth International Conference on Technological Ecosystems for Enhancing Multiculturality (Salamanca, Spain, October 24th-26th, 2018)*, F. J. García-Péñalvo, Ed. pp. 397-404, New York, NY, USA: ACM, 2018. doi: 10.1145/3284179.3284247.
- [52] S. González-Izard, Ó. Alonso Plaza, R. Sánchez Torres, J. A. Juanes-Méndez y F. J. García-Péñalvo, "NextMed, Augmented and Virtual Reality platform for 3D medical imaging visualization," en *TEEM'19 Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality (León, Spain, October 16th-18th, 2019)*, M. Á. Conde-González, F. J. Rodríguez-Sedano, C. Fernández-Llamas y F. J. García-Péñalvo, Eds. ICPS: ACM International Conference Proceedings Series, pp. 459-467, New York, NY, USA: ACM, 2019. doi: 10.1145/3362789.3362936.
- [53] S. González-Izard, R. Sánchez Torres, Ó. Alonso Plaza, J. A. Juanes-Méndez y F. J. García-Péñalvo, "Nextmed: Automatic Imaging Segmentation, 3D Reconstruction, and 3D model Visualization Platform Using Augmented and Virtual Reality" *Sensors*, vol. 20, no. 10, art. 2962, 2020. doi: 10.3390/s20102962.
- [54] F. J. García-Péñalvo, C. García de Figuerola y J. A. Merlo-Vega, "Open knowledge management in higher education," *Online Information Review*, vol. 34, no. 4, pp. 517-519, 2010.
- [55] F. J. García-Péñalvo, C. García de Figuerola y J. A. Merlo-Vega, "Open knowledge: Challenges and facts," *Online Information Review*, vol. 34, no. 4, pp. 520-539, 2010. doi: 10.1108/14684521011072963.
- [56] F. J. García-Péñalvo, "La Universidad de la próxima década: La Universidad Digital," en *Universidad y Desarrollo Social de la Web*, C. Suárez-Guerrero y F. J. García-Péñalvo, Eds. pp. 181-197, Washington DC, USA: Editandum, 2011.
- [57] C. Suárez Guerrero y F. J. García Peñalvo Eds., "Universidad y Desarrollo Social de la Web." Washington DC, USA: Editandum, 2011.
- [58] A. J. Berlanga, F. J. García-Péñalvo y P. B. Sloep, "Towards eLearning 2.0 University," *Interactive Learning Environments*, vol. 18, no. 3, pp. 199-201, 2010. doi: 10.1080/10494820.2010.500498.
- [59] F. J. García-Péñalvo, M. L. Sein-Echaluce y Á. Fidalgo-Blanco, "Educational Innovation Management. A Case Study at the University of Salamanca," en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves y M. C. Felgueiras, Eds. ACM International Conference Proceeding Series (ICPS), pp. 151-158, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808604.
- [60] F. J. García-Péñalvo y S. Rivera, M., "Digital University 2010," en *EUNIS 2009. IT: Key of the European Space of Knowledge. (Santiago de Compostela, Spain, June 23rd - 26th, 2009)*, J. R. Canay, J. Franco y P. J. Rey, Eds. p. 32, Santiago de Compostela, Spain: Universidade de Santiago de Compostela Publicacíons, 2009.

- [61] L. Briz Ponce y F. J. García-Peñalvo, "An empirical assessment of a technology acceptance model for apps in medical education," *Journal of Medical Systems*, vol. 39, no. 11, p. Paper 176, 2015. doi: 10.1007/s10916-015-0352-x.
- [62] L. Briz Ponce, J. A. Juanes Méndez y F. J. García-Peñalvo, "A systematic review of using mobile devices in medical education," en *Proceedings of 2014 International Symposium on Computers in Education (SIIE), Logrono, La Rioja, Spain, 12-14 Nov. 2014*, J. L. Sierra-Rodríguez, J. M. Dodero-Beardo y D. Burgos, Eds. pp. 205-210, USA: Institute of Electrical and Electronics Engineers, 2014. doi: 10.1109/SIIE.2014.7017731.
- [63] L. Briz Ponce, J. A. Juanes Méndez y F. J. García-Peñalvo, "Analysis of certificated mobile application for medical education purposes," en *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM 2014) (Salamanca, Spain, October 1-3, 2014)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 13-17, New York, NY, USA: ACM, 2014. doi: 10.1145/2669711.2669871.
- [64] L. Briz Ponce, J. A. Juanes Méndez y F. J. García-Peñalvo, "Dispositivos móviles y apps: Características y uso actual en educación médica," *Novática. Revista de la Asociación de Técnicos en Informática*, vol. 231, pp. 86-91, 2015.
- [65] L. Briz-Ponce y J. A. Juanes-Méndez, "Mobile Devices and Apps, Characteristics and Current Potential on Learning," *Journal of Information Technology Research*, vol. 8, no. 4, pp. 26-37, 2015. doi: 10.4018/JITR.2015100102.
- [66] L. Briz-Ponce, J. A. Juanes-Méndez y F. J. García-Peñalvo, "Synopsis of discussion session on defining a new quality protocol for medical apps," en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves y M. C. Felgueiras, Eds. pp. 7-12, New York, NY, USA: ACM, 2015. doi: 10.1145/2808580.2808582.
- [67] L. Briz-Ponce, A. Pereira, L. Carvalho, J. A. Juanes-Méndez y F. J. García-Peñalvo, "Learning with mobile technologies – Students' behavior," *Computers in Human Behavior*, vol. 72, pp. 612-620, 2017. doi: 10.1016/j.chb.2016.05.027.
- [68] J. C. Sánchez-Prieto, S. Olmos-Migueláñez y F. J. García-Peñalvo, "¿Utilizarán los futuros docentes las tecnologías móviles? Validación de una propuesta de modelo TAM extendido," *RED. Revista de Educación a Distancia*, vol. 52, art. 5, 2017. doi: 10.6018/red/52/5.
- [69] F. J. García-Peñalvo, "Modelo de referencia para la enseñanza no presencial en universidades presenciales," *Campus Virtuales*, vol. 9, no. 1, pp. 41-56, 2020.
- [70] R. Therón y L. Fontanillo, "Diachronic-information visualization in historical dictionaries," *Information Visualization*, vol. 14, no. 2, pp. 111-136, 2015. doi: 10.1177/1473871613495844.
- [71] F. J. García-Peñalvo, "Digital Humanities Data Processing," *Journal of Information Technology Research*, vol. 9, no. 1, 2016.
- [72] R. Therón, C. Seguín, L. Cruz y M. Vaquero, "Highly interactive and natural user interfaces: enabling visual analysis in historical lexicography," en *DATeCH '14 Proceedings of the First International Conference on Digital Access to Textual Cultural Heritage* pp. 153-158, New York, NY, USA: ACM, 2014. doi: 10.1145/2595188.2595215.
- [73] R. Therón y E. Wandl-Vogt, "The fun of exploration:How to access a non-standard language corpus visually," en *VisLR: Visualization as Added Value in the Development, Use and Evaluation of Language Resources*, A. Hautli-Janisz, V. Lyding y C. Rohrdantz, Eds. pp. 9-12, 2014.
- [74] F. J. García-Peñalvo, R. Colomo-Palacios, P. Soto-Acosta, I. Martínez-Conesa y E. Serradell-López, "SemSEDoc: Use of semantic technologies in the use of document repositories of software development projects," *Information Research-an International Electronic Journal*, vol. 16, no. 4, art. 504, 2011.

- [75] Á. Fidalgo-Blanco, M. L. Sein-Echaluce y F. J. García-Peñalvo, "Knowledge spirals in higher education teaching innovation," *International Journal of Knowledge Management*, vol. 10, no. 4, pp. 16-37, 2014. doi: 10.4018/ijkm.2014100102.
- [76] Á. Fidalgo-Blanco, M. L. Sein-Echaluce y F. J. García-Peñalvo, "Epistemological and ontological spirals: From individual experience in educational innovation to the organisational knowledge in the university sector," *Program: Electronic library and information systems*, vol. 49, no. 3, pp. 266-288, 2015. doi: 10.1108/PROG-06-2014-0033.
- [77] F. J. García-Peñalvo, M. Á. Conde, M. Johnson y M. Alier, "Knowledge co-creation process based on informal learning competences tagging and recognition," *International Journal of Human Capital and Information Technology Professionals (IJHCITP)*, vol. 4, no. 4, pp. 18-30, 2013. doi: 10.4018/ijhcitp.2013100102.
- [78] F. J. García-Peñalvo, J. Cruz-Benito, O. Borrás-Gené y Á. Fidalgo Blanco, "Evolution of the Conversation and Knowledge Acquisition in Social Networks related to a MOOC Course," en *Learning and Collaboration Technologies. Second International Conference, LCT 2015, Held as Part of HCI International 2015, Los Angeles, CA, USA, August 2-7, 2015, Proceedings*, P. Zaphiris y I. Ioannou, Eds. Lecture Notes in Computer Science, no. 9192, pp. 470-481, Switzerland: Springer International Publishing, 2015. doi: 10.1007/978-3-319-20609-7_44.
- [79] F. J. García-Peñalvo, J. García y R. Therón, "Analysis of the OWL ontologies: A survey," *Scientific Research and Essays*, vol. 6, no. 20, pp. 4318-4329, 2011. doi: 10.5897/SRE11.1036.
- [80] F. J. García-Peñalvo, M. A. Conde, M. Alier y M. J. Casany, "Opening Learning Management Systems to Personal Learning Environments," *Journal of Universal Computer Science*, vol. 17, no. 9, pp. 1222-1240, 2011. doi: 10.3217/jucs-017-09-1222.
- [81] M. J. Casany, M. Alier, M. Á. Conde y F. J. García-Peñalvo, "SOA initiatives for eLearning. A Moodle case," en *23rd International Conference on Advanced Information Networking and Applications, AINA 2009, Workshops Proceedings. The International Symposium on Mining and Web (MAW 2009)* pp. 750-755, Los Alamitos, California, USA: IEEE Computer Society, 2009. doi: 10.1109/waina.2009.196.
- [82] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Casany Guerrero y M. Alier Forment, "Back and Forth: From the LMS to the Mobile Device. A SOA Approach," en *Proceedings of the IADIS International Conference Mobile Learning 2009 (Barcelona, Spain, February 26-28, 2009)*, I. Arnedillo Sánchez y P. Isaías, Eds. pp. 114-120, Portugal: IADIS Press, 2009.
- [83] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Casany y M. Alier, "Adapting LMS architecture to the SOA: an Architectural Approach," en *Proceedings of the Fourth International Conference on Internet and Web Applications and Services – ICIW 2009 (Venice/Mestre, Italy, 24-28 May 2009)*, H. Sasaki, G. O. Bellot, M. Ehmann y O. Dini, Eds. pp. 322-327, Los Alamitos, California, USA: IEEE Computer Society, 2009. doi: 10.1109/iciw.2009.54.
- [84] E. M. Morales-Morgado, A. B. Gil y F. J. García-Peñalvo, "Arquitectura para la Recuperación de Objetos de Aprendizaje de Calidad en Repositorios Distribuidos," en *Actas del 5º Taller en Sistemas Hipermédia Colaborativos y Adaptativos, SHCA 2007*, vol. 1, F. Gutiérrez Vela y P. Paderewski Rodríguez, Eds. Actas de Talleres de Ingeniería del Software y Bases de Datos, SISTEDES, no. 1, pp. 31-38, Zaragoza, España, 2007.
- [85] R. Colomo-Palacios, C. Casado-Lumbrales, P. Soto-Acosta, F. J. García-Peñalvo y E. Tovar-Caro, "Project managers in global software development teams: A study of the effects on productivity and performance," *Software Quality Journal*, vol. 22, no. 1, pp. 3-19, 2014. doi: 10.1007/s11219-012-9191-x.
- [86] M. Á. Conde, D. A. Gómez, A. D. de Dios y F. J. García-Peñalvo, "Moodle 2.0 Web Services Layer and Its New Application Contexts. First International Conference, TECH-EDUCATION 2010, Athens, Greece, May 19-21, 2010. Proceedings," en *Technology Enhanced Learning: Quality of Teaching and Educational Reform*, vol. 73,

- M. D. Lytras *et al.*, Eds. Communications in Computer and Information Science, pp. 110-116, Berlin: Springer, 2010. doi: 10.1007/978-3-642-13166-0_16.
- [87] J. Cruz-Benito, O. Borrás-Gené, F. J. García-Peñalvo, Á. Fidalgo-Blanco y R. Therón, "Extending MOOC ecosystems using web services and software architectures," en *Proceedings of the XVI International Conference on Human Computer Interaction. Vilanova i la Geltrú, Spain — September 07 - 09, 2015* p. Art. 52, New York, USA: ACM, 2015. doi: 10.1145/2829875.2829923.
- [88] J. Piguillem *et al.*, "Moodbile: A Moodle web services extension for mobile applications," en *Proceedings of the 1st Moodle Research Conference (Heraklion, Crete, Greece, September, 14-15, 2012)*, S. Retalis y M. Dougiamas, Eds. pp. 148-156, 2012.
- [89] F. J. García-Peñalvo, *Modelo de Reutilización Soportado por Estructuras Complejas de Reutilización Denominadas Mecanos* (Vitor, no. 53). Salamanca, España: Ediciones Universidad de Salamanca, 2000.
- [90] A. Vázquez-Ingelmo, F. J. García-Peñalvo y R. Therón, "Taking advantage of the software product line paradigm to generate customized user interfaces for decision-making processes: A case study on university employability," *PeerJ Computer Science*, vol. 5, art. e203, 2019. doi: 10.7717/peerj-cs.203.
- [91] A. Vázquez-Ingelmo, F. J. García-Peñalvo, R. Therón, D. Amo-Filvà y D. Fonseca-Escudero, "Connecting domain-specific features to source code: Towards the automatization of dashboard generation," *Cluster Computing. The Journal of Networks, Software Tools and Applications*, vol. In Press, 2020. doi: 10.1007/s10586-019-03012-1.
- [92] A. Vázquez-Ingelmo, F. J. García-Peñalvo y R. Therón, "Information Dashboards and Tailoring Capabilities - A Systematic Literature Review," *IEEE Access*, vol. 7, pp. 109673-109688, 2019. doi: 10.1109/ACCESS.2019.2933472.
- [93] A. Vázquez-Ingelmo, F. J. García-Peñalvo, R. Therón y M. Á. Conde, "Representing Data Visualization Goals and Tasks Through Meta-Modeling to Tailor Information Dashboards," *Applied Sciences*, vol. 10, no. 7, art. 2306, 2020. doi: 10.3390/app10072306.
- [94] F. J. García-Peñalvo, "Estado actual de los sistemas E-Learning," *Education in the Knowledge Society*, vol. 6, no. 2, 2005.
- [95] F. J. García-Peñalvo Ed. "Advances in E-Learning: Experiences and methodologies." Hershey, PA, USA: Information Science Reference (formerly Idea Group Reference), 2008.
- [96] A. M. Seoane-Pardo y F. J. García-Peñalvo, "Los orígenes del tutor: Fundamentos filosóficos y epistemológicos de la monitorización para su aplicación a contextos de e-learning," *Education in the Knowledge Society*, vol. 8, no. 2, pp. 9-30, 2007.
- [97] A. M. Seoane-Pardo y F. J. García-Peñalvo, "Philosophical and Epistemological Basis for Building a Quality Online Training Methodology," en *Advances in E-Learning: Experiences and Methodologies*, F. J. García-Peñalvo, Ed. pp. 46-60, Hershey, PA, USA: Information Science Reference 2008.
- [98] F. J. García-Peñalvo y A. M. Seoane-Pardo, "Una revisión actualizada del concepto de eLearning. Décimo Aniversario," *Education in the Knowledge Society*, vol. 16, no. 1, pp. 119-144, 2015. doi: 10.14201/eks2015161119144.
- [99] F. J. García-Peñalvo y A. M. Seoane-Pardo Eds., "Online Tutor 2.0: Methodologies and Case Studies for Successful Learning." Hershey, PA, USA: IGI Global, 2014. doi: 10.4018/978-1-4666-5832-5.
- [100] A. M. Seoane-Pardo y F. J. García-Peñalvo, "Pedagogical Patterns and Online Teaching," en *Online Tutor 2.0: Methodologies and Case Studies for Successful Learning*, F. J. García-Peñalvo y A. M. Seoane Pardo, Eds. no. Advances in Educational Technologies and Instructional Design (AETID) Book Series, pp. 298-316, Hershey, PA: IGI Global, 2014. doi: 10.4018/978-1-4666-5832-5.ch015.
- [101] A. M. Seoane-Pardo y F. J. García-Peñalvo, "Patrones pedagógicos y docencia en red," en *Formación en Red: Aprender con Tecnologías Digitales*, J. M. Jerónimo Montes,

- Ed. pp. 30-47, México: Universidad Nacional Autónoma de México. Facultad de Estudios Superiores Zaragoza, 2014.
- [102] A. M. Seoane-Pardo, "Formalización de un modelo de formación online basado en el factor humano y la presencia docente mediante un lenguaje de patrón," PhD, Programa de Doctorado en Formación en la Sociedad del Conocimiento, Universidad de Salamanca, Salamanca, Spain, 2014. Disponible en: <https://goo.gl/sNrkJu>.
- [103] A. M. Seoane-Pardo y F. J. García-Péñalvo, "Online Tutoring and Mentoring," en *Encyclopedia of Networked and Virtual Organizations*, vol. II, G. D. Putnik y M. M. Cunha, Eds. pp. 1120-1127, Hershey, PA, USA: Information Science Reference, 2008.
- [104] J. Cruz-Benito, R. Therón, F. J. García-Péñalvo y E. Pizarro Lucas, "Discovering usage behaviors and engagement in an educational virtual world," *Computers in Human Behavior*, vol. 47, pp. 18-25, 2015. doi: 10.1016/j.chb.2014.11.028.
- [105] H. Tinoco-Giraldo, E. M. Torrecilla Sánchez y F. J. García-Péñalvo, "E-Mentoring in Higher Education: A Structured Literature Review and Implications for Future Research," *Sustainability*, vol. 12, no. 11, art. 4344, 2020. doi: 10.3390/su12114344.
- [106] F. J. García-Péñalvo, "The WYRED project: A technological platform for a generative research and dialogue about youth perspectives and interests in digital society," *Journal of Information Technology Research*, vol. 9, no. 4, pp. vi-x, 2016.
- [107] F. J. García-Péñalvo, M. Franco Martín, A. García-Holgado, J. M. Toribio Guzmán, J. Largo Antón y M. C. Sánchez Gómez, "Psychiatric patients tracking through a private Social Network for relatives," *Journal of Medical Systems*, vol. 40, no. 7, p. Paper 172, 2016. doi: 10.1007/s10916-016-0530-5.
- [108] J. M. Toribio-Guzmán, A. García-Holgado, F. Soto Pérez, F. J. García-Péñalvo y M. Franco Martín, "Usability Evaluation of a Private Social Network on Mental Health for Relatives," *Journal of Medical Systems*, vol. 41, p. Paper 137, 2017. doi: 10.1007/s10916-017-0780-x.
- [109] P. No-Gutiérrez, M. J. Rodríguez Conde, V. Zangrandó y A. M. Seoane-Pardo, "EERA: Peer Tutoring With Migrant Students: Intercultural Mentoring Programme," presentado en ECER 2015 "Education and Transition. Contributions from Educational Research", Budapest, Hungary, 2015. Disponible: <https://goo.gl/VZc6mZ>.
- [110] P. No-Gutiérrez, M. J. Rodríguez Conde, V. Zangrandó, A. M. Seoane-Pardo y L. Luatti, "Peer tutoring at school with migrant students: intercultural mentoring programme," en *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'14). Salamanca, Spain, October 1-3, 2014*, F. J. García-Péñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 483-487, New York, NY, USA: ACM, 2014. doi: 10.1145/2669711.2669943.
- [111] M. Martín-Cilleros y M. C. Sánchez-Gómez, "Análisis cualitativos de tópicos vinculados a la calidad de vida en personas con discapacidad," *Ciência & Saúde Coletiva*, vol. 21, no. 8, pp. 2365-2374, 2016. doi: 10.1590/1413-81232015218.04182016.
- [112] J. L. Muñoz-Sánchez, M. C. Sánchez-Gómez, M. V. Martín-Cilleros, C. Blanco-Dorado y M. Á. Franco-Martín, "Suicide prevention according to different health professionals: quantification analysis in a qualitative study," *Clinical Practice*, vol. 14, no. 5, pp. 278-289, 2017.
- [113] M. C. Sánchez-Gómez y M. V. Martín-Cilleros, "Implementation of Focus Group in Health Research," en *Computer supported qualitative research*, A. P. Costa, L. P. Reis, F. Neri de Sousa, A. Moreira y D. Lamas, Eds. Studies in Systems, Decision and Control, no. 71, pp. 49-61, Switzerland: Springer International Publishing, 2017. doi: 10.1007/978-3-319-43271-7_5.
- [114] M. C. Sánchez-Gómez *et al.*, "Análisis de contenido cualitativo: Estudio de la satisfacción de los usuarios sobre la presentación de un nuevo medicamento en la salud pública," en *La Práctica de la investigación cualitativa: Ejemplificación de estudios*, A. P. Costa, M. C. Sánchez-Gómez y M. V. Martín-Cilleros, Eds. pp. 57-92, Aveiro, Portugal: Ludomedia, 2017.

- [115] P. Zapata-Sepúlveda, F. López-Sánchez y M. C. Sánchez-Gómez, "Content analysis research method with Nvivo-6 software in a PhD thesis: An approach to the long-term psychological effects on Chilean ex-prisoners survivors of experiences of torture and imprisonment," *Quality & Quantity*, vol. 46, no. 1, pp. 379-390, 2012. doi: 10.1007/s11135-011-9551-9.
- [116] A. García-Holgado, J. J. Mena Marcos, F. J. García-Peñalvo y C. González, "Inclusion of gender perspective in Computer Engineering careers. Elaboration of a questionnaire to assess the gender gap in Tertiary Education," en *2018 IEEE Global Engineering Education Conference (EDUCON), (17-20 April 2018, Santa Cruz de Tenerife, Canary Islands, Spain)* pp. 1553-1560, USA: IEEE, 2018. doi: 10.1109/EDUCON.2018.8363417.
- [117] A. García-Holgado, F. J. García-Peñalvo, J. J. Mena Marcos y C. González, "Introducción de la Perspectiva de Género en la docencia de Ingeniería del Software," en *La innovación docente como misión del profesorado. Actas del IV Congreso Internacional sobre Aprendizaje, Innovación y Competitividad. CINAIC 2017 (4-6 de Octubre de 2017, Zaragoza, España)*, M. L. Sein-Echaluce Lacleta, Á. Fidalgo-Blanco y F. J. García-Peñalvo, Eds. pp. 627-631, Zaragoza, España: Servicio de Publicaciones Universidad de Zaragoza, 2017. doi: 10.26754/CINAIC.2017.000001_134.
- [118] A. García-Holgado, F. J. García-Peñalvo, J. J. Mena Marcos y C. González González, "Inclusión de la perspectiva de género en la asignatura de Ingeniería de Software I," en "Memorias de Innovación Docente," núm. ID2016/084, Universidad de Salamanca, Salamanca, España, 2017. Disponible en: <https://goo.gl/PzZeAN>.
- [119] A. J. Berlanga y F. J. García-Peñalvo, "Learning Technology Specifications: Semantic Objects for Adaptive Learning Environments," *International Journal of Learning Technology*, vol. 1, no. 4, pp. 458-472, 2005. doi: 10.1504/IJLT.2005.007155.
- [120] A. J. Berlanga y F. J. García-Peñalvo, "IMS LD reusable elements for adaptive learning designs," *Journal of Interactive Media in Education*, vol. 11, 2005.
- [121] A. J. Berlanga y F. J. García-Peñalvo, "Learning Design in Adaptive Educational Hypermedia Systems," *Journal of Universal Computer Science*, vol. 14, no. 22, pp. 3627-3647, 2008. doi: 10.3217/jucs-014-22-3627.
- [122] A. J. Berlanga, F. J. García-Peñalvo y J. Carabias, "Authoring adaptive learning designs using IMS LD," en *Adaptive Hypermedia and Adaptive Web-Based Systems. 4th International Conference, AH 2006, Proceedings (Dublin, Ireland, June 21-23, 2006)*, V. Wade, H. Ashman y B. Smyth, Eds. Lecture Notes in Computer Science, no. LNCS 4018, pp. 31-40, Berlin: Springer Verlag, 2006. doi: 10.1007/11768012_5.
- [123] A. Berlanga y F. J. García-Peñalvo, "An open model to define adaptive educational hypermedia systems based on learning technology specifications," en *Proceedings of the 15th International Workshop on Database and Expert Systems Applications, 2004 (Zaragoza, Spain, 30 August – 3 September 2004)* pp. 198-202, USA: IEEE Computer Society Press, 2004. doi: 10.1109/DEXA.2004.1333473.
- [124] F. J. García-Peñalvo, R. Colomo-Palacios y J. Y. J. Hsu, "Discovering knowledge through highly interactive information based systems foreword," *Journal of Information Science and Engineering*, vol. 29, no. 1, 2013.
- [125] J. Cruz-Benito, A. Vázquez-Ingelmo, J. C. Sánchez-Prieto, R. Therón, F. J. García-Peñalvo y M. Martín-González, "Enabling adaptability in web forms based on user characteristics detection through A/B testing and machine learning," *IEEE Access*, vol. 6, pp. 2251-2265, 2018. doi: 10.1109/ACCESS.2017.2782678.
- [126] J. Joo-Nagata, F. Martínez Abad, J. García-Bermejo Giner y F. J. García-Peñalvo, "Augmented reality and pedestrian navigation through its implementation in m-learning and e-learning: Evaluation of an educational program in Chile," *Computers & Education*, vol. 111, pp. 1-17, 2017. doi: 10.1016/j.compedu.2017.04.003.
- [127] M. Alier Forment, M. J. Casany Guerrero, M. Á. Conde González, F. J. García-Peñalvo y C. Severance, "Interoperability for LMS: the missing piece to become the common place for e-learning innovation," *International Journal of Knowledge and Learning (IJKL)*, vol. 6, no. 2/3, pp. 130-141, 2010. doi: 10.1504/IJKL.2010.034749.

- [128] M. Alier Forment *et al.*, "Docs4Learning: Getting Google Docs to Work within the LMS with IMS BLTI," *Journal of Universal Computer Science*, vol. 18, no. 11, pp. 1483-1500, 2012. doi: 10.3217/jucs-018-11-1483.
- [129] F. J. García-Peñalvo y J. García Carrasco, "Educational hypermedia resources facilitator," *Computers & Education*, vol. 44, no. 3, pp. 301-325, Apr 2005. doi: 10.1016/j.compedu.2004.02.004.
- [130] M. J. Casany *et al.*, "Moodbile: A Framework to Integrate m-Learning Applications with the LMS," *Journal of Research and Practice in Information Technology (JRPIT)*, vol. 44, no. 2, pp. 129-149, 2012.
- [131] J. C. Sánchez-Prieto, S. Olmos-Migueláñez y F. J. García-Peñalvo, "Understanding mobile learning: devices, pedagogical implications and research lines," *Education in the Knowledge Society*, vol. 15, no. 1, pp. 20-42, 2014.
- [132] J. C. Sánchez-Prieto, S. Olmos-Migueláñez y F. J. García-Peñalvo, "Informal tools in formal contexts: Development of a model to assess the acceptance of mobile technologies among teachers," *Computers in Human Behavior*, vol. 55A, pp. 519-528, 2016. doi: 10.1016/j.chb.2015.07.002.
- [133] D. A. Gómez-Aguilar, R. Therón y F. J. García-Peñalvo, "Understanding educational relationships in Moodle with ViMoodle," en *Proceedings of the Eighth IEEE International Conference on Advanced Learning Technologies, 2008. ICALT '08. Santander, Cantabria, Spain, 1-5 July 2008*, P. Díaz, A. Ignacio y E. Mora, Eds. pp. 954-956, USA: IEEE, 2008. doi: 10.1109/ICALT.2008.276.
- [134] D. A. Gómez-Aguilar, R. Therón y F. J. García-Peñalvo, "Semantic Spiral Timelines Used as Support for e-Learning," *Journal of Universal Computer Science*, vol. 15, no. 7, pp. 1526-1545, 2009. doi: 10.3217/jucs-015-07-1526.
- [135] Á. Fidalgo-Blanco, F. J. García-Peñalvo y M. L. Sein-Echaluce Lacleta, "A methodology proposal for developing adaptive cMOOC," en *Proceedings of the First International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'13)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 553-558, New York, NY, USA: ACM, 2013. doi: 10.1145/2536536.2536621.
- [136] Á. Fidalgo-Blanco, M. L. Sein-Echaluce Lacleta, O. Borrás Gené y F. J. García-Peñalvo, "Educación en abierto: Integración de un MOOC con una asignatura académica," *Education in the Knowledge Society*, vol. 15, no. 3, pp. 233-255, 2014.
- [137] Á. Fidalgo-Blanco, M. L. Sein-Echaluce Lacleta y F. J. García-Peñalvo, "MOOC cooperativo. Una integración entre cMOOC y xMOOC," en *Actas del II Congreso Internacional sobre Aprendizaje, Innovación y Competitividad (CINAIC)*, Á. Fidalgo Blanco y M. L. Sein-Echaluce Lacleta, Eds. pp. 481-486, Madrid, Spain: Fundación General de la Universidad Politécnica de Madrid, 2013.
- [138] Á. Fidalgo-Blanco, M. L. Sein-Echaluce Lacleta y F. J. García-Peñalvo, "Methodological Approach and Technological Framework to break the current limitations of MOOC model," *Journal of Universal Computer Science*, vol. 21, no. 5, pp. 712-734, 2015. doi: 10.3217/jucs-021-05-0712.
- [139] F. J. García-Peñalvo, "Massive Open Online Courses as data sources for making decisions in learning processes," *Journal of Information Technology Research*, vol. 8, no. 4, pp. iv-vii, 2015.
- [140] A. García-Holgado, J. Cruz-Benito y F. J. García-Peñalvo, "Analysis of knowledge management experiences in Spanish public administration," en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)* G. R. Alves y M. C. Felgueiras, Eds. International Conference Proceedings Series, pp. 189-193, New York, NY, USA: ACM, 2015. doi: 10.1145/2808580.2808609.
- [141] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Rodríguez-Conde, M. Alier y A. García-Holgado, "Perceived openness of Learning Management Systems by students and teachers in education and technology courses," *Computers in Human Behavior*, vol. 31, pp. 517-526, 2014. doi: 10.1016/j.chb.2013.05.023.

- [142] E. M. Morales-Morgado, D. Gómez-Aguilar y F. J. García-Peñalvo, "HEODAR: Herramienta para la Evaluación de Objetos Didácticos de Aprendizaje Reutilizables," en *Actas del X Simposio Internacional de Informática Educativa - SIE'08* J. Á. Velázquez-Iturbide, F. J. García-Peñalvo y A. B. Gil, Eds. Colección Aquilafuente, Salamanca, España: Ediciones Universidad de Salamanca, 2008.
- [143] C. Muñoz, M. Á. Conde y F. J. García-Peñalvo, "Moodle HEODAR implementation and its implantation in an academic context," *International Journal of Technology Enhanced Learning (IJTEL)*, vol. 2, no. 3, pp. 241-255, 2010. doi: 10.1504/IJTEL.2010.033580.
- [144] C. Muñoz, F. J. García-Peñalvo, E. M. Morales-Morgado, M. Á. Conde-González y A. M. Seoane-Pardo, "Improving Learning Object Quality: Moodle HEODAR Implementation," *International Journal of Distance Education Technologies*, vol. 10, no. 4, pp. 1-16, 2012. doi: 10.4018/jdet.2012100101.
- [145] E. M. Morales, F. J. García-Peñalvo, Á. Barrón, A. J. Berlanga y C. López, "Propuesta de Evaluación de Objetos de Aprendizaje," en *Actas del II Simposio Pluridisciplinar sobre Diseño, Evaluación y Descripción de Contenidos Educativos Reutilizables, SPDECE'05 (Barcelona, 19, 20 y 21 de Octubre de 2005)*, 2005.
- [146] F. J. García-Peñalvo y M. Á. Conde, "The impact of a mobile Personal Learning Environment in different educational contexts," *Universal Access in the Information Society*, vol. 14, no. 3, pp. 375-387, 2015. doi: 10.1007/s10209-014-0366-z.
- [147] P. R. Humanante-Ramos, F. J. García-Peñalvo y M. Á. Conde González, "Towards mobile personal learning environments (MPLE) in higher education," en *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM 2014) (Salamanca, Spain, October 1-3, 2014)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 677-681, New York, NY, USA: ACM, 2014. doi: 10.1145/2669711.2669973.
- [148] P. R. Humanante-Ramos, F. J. García-Peñalvo y M. Á. Conde-González, "Personal Learning Environments and online classrooms: An experience with university students," *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje (IEEE RITA)*, vol. 10, no. 1, pp. 26-32, 2015. doi: 10.1109/RITA.2015.2391411.
- [149] P. R. Humante-Ramos, F. J. García-Peñalvo y M. Á. Conde-González, "Mobile personal learning environments: conceptualization and structure," en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves y M. C. Felgueiras, Eds. ACM International Conference Proceeding Series (ICPS), pp. 117-123, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808599.
- [150] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Rodríguez-Conde, M. Alier, M. J. Casany y J. Piguillem, "An evolving Learning Management System for new educational environments using 2.0 tools," *Interactive Learning Environments*, vol. 22, no. 2, pp. 188-204, 2014. doi: 10.1080/10494820.2012.745433.
- [151] F. J. García-Peñalvo y M. Alier, "Learning management system: Evolving from silos to structures," *Interactive Learning Environments*, vol. 22, no. 2, pp. 143-145, 2014. doi: 10.1080/10494820.2014.884790.
- [152] Á. Fidalgo-Blanco, M. L. Sein-Echaluce y F. J. García-Peñalvo, "From massive access to cooperation: Lessons learned and proven results of a hybrid xMOOC/cMOOC pedagogical approach to MOOCs," *International Journal of Educational Technology in Higher Education (ETHE)*, vol. 13, p. 24, 2016. doi: 10.1186/s41239-016-0024-z.
- [153] F. J. García-Peñalvo, Á. Fidalgo-Blanco, M. Sein-Echaluce Lacleta y M. Á. Conde-González, "Cooperative Micro Flip Teaching," en *Learning and Collaboration Technologies. Third International Conference, LCT 2016, Held as Part of HCI International 2016, Toronto, ON, Canada, July 17-22, 2016, Proceedings*, P. Zaphiris y I. Ioannou, Eds. Lecture Notes in Computer Science, no. 9753, pp. 14-24, Switzerland: Springer International Publishing, 2016. doi: 10.1007/978-3-319-39483-1_2.
- [154] M. L. Sein-Echaluce Lacleta, Á. Fidalgo-Blanco, F. J. García-Peñalvo y M. Á. Conde-González, "iMOOC Platform: Adaptive MOOCs," en *Learning and Collaboration*

- Technologies. Third International Conference, LCT 2016, Held as Part of HCI International 2016, Toronto, ON, Canada, July 17-22, 2016, Proceedings*, P. Zaphiris y I. Ioannou, Eds. Lecture Notes in Computer Science, no. 9753, pp. 380–390, Switzerland: Springer International Publishing, 2016. doi: 10.1007/978-3-319-39483-1_35.
- [155] J. C. Sánchez-Prieto, F. Huang, S. Olmos-Migueláñez, F. J. García-Peñalvo y T. Teo, "Exploring the unknown: The effect of resistance to change and attachment on mobile adoption among secondary pre-service teachers," *British Journal of Educational Technology*, vol. 50, no. 5, pp. 2433-449, 2019. doi: 10.1111/bjet.12822.
 - [156] S. Verdugo-Castro, M. C. Sánchez-Gómez y A. García-Holgado, "Gender gap in the STEM sector in pre and university studies of Europe associated with ethnic factors," en *Sixth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM 2018)*, Salamanca, Spain, 2018: ACM
 - [157] F. J. García-Peñalvo, "Innovación educativa. Decisiones estratégicas," presentado en Seminario Innovación Educativa: En Busca de los Indicadores Perdidos (7 de mayo de 2014), Zaragoza, España, 2014. Disponible: <https://goo.gl/pG9xMk>.
 - [158] F. J. García-Peñalvo, "Mapa de tendencias en Innovación Educativa," *Education in the Knowledge Society (EKS)*, vol. 16, no. 4, pp. 6-23, 2015. doi: 10.14201/eks2015164623.
 - [159] F. J. García-Peñalvo, "Aprendizaje Servicio. Una experiencia en Gobierno TI," presentado en Ciclo de Jornadas 2017. Tendencias en Innovación Educativa y su implantación en UPM. II Jornada: Aprendizaje Servicio y otras experiencias de innovación educativa en la UPM. 16 de octubre de 2017, Madrid, España, 2017. Disponible: <https://goo.gl/M1XVCB>, doi: 10.5281/zenodo.1009676.
 - [160] F. J. García-Peñalvo, "Innovación educativa," en *Proyecto Docente e Investigador. Catedrático de Universidad. Perfil Docente: Ingeniería del Software y Gobierno de Tecnologías de la Información. Perfil Investigador: Tecnologías del Aprendizaje. Área de Ciencia de la Computación e Inteligencia Artificial*, Salamanca, España: Departamento de Informática y Automática. Universidad de Salamanca, 2018.
 - [161] F. J. García-Peñalvo, Á. Fidalgo-Blanco y M. L. Sein-Echaluce, "Tendencias en Innovación Educativa," presentado en III Congreso Internacional sobre Aprendizaje, Innovación y Competitividad, CINAIC 2015, (14-16 de octubre de 2015), Madrid, España, 2015. Disponible: <https://goo.gl/5wUaFd>.
 - [162] F. J. García-Peñalvo y M. S. Ramírez-Montoya, "Aprendizaje, Innovación y Competitividad: La Sociedad del Aprendizaje," *RED. Revista de Educación a Distancia*, vol. 52, art. 1, 2017. doi: 10.6018/red/52/1.
 - [163] F. J. García-Peñalvo, A. Sarasa Cabezuelo y J. L. Sierra Rodríguez, "Innovando en los Procesos de Ingeniería. Ingeniería como Medio de Innovación," *VAEP-RITA*, vol. 2, no. 1, pp. 26-28, 2014.
 - [164] M. S. Ramírez-Montoya y F. J. García-Peñalvo, "Movimiento Educativo Abierto," *Virtualis*, vol. 6, no. 12, pp. 1-13, 2015.
 - [165] M. S. Ramírez-Montoya, F. J. García-Peñalvo y R. McGreal, "Shared Science and Knowledge. Open Access, Technology and Education," *Comunicar*, vol. 26, no. 54, pp. 1-5, 2018.
 - [166] F. J. García-Peñalvo, Á. Fidalgo-Blanco y M. L. Sein-Echaluce, "An adaptive hybrid MOOC model: Disrupting the MOOC concept in higher education," *Telematics and Informatics*, vol. 35, pp. 1018-1030, 2018. doi: 10.1016/j.tele.2017.09.012.
 - [167] F. J. García-Peñalvo, Á. Fidalgo-Blanco y M. L. Sein-Echaluce, "Los MOOC: Un análisis desde una perspectiva de la innovación institucional universitaria," *La Cuestión Universitaria*, vol. 9, pp. 117-135, 2017.
 - [168] F. J. García-Peñalvo *et al.*, "Developing Win-Win Solutions for Virtual Placements in Informatics: The VALS Case," en *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'14)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 733-738, New York, USA: ACM, 2014. doi: <http://dx.doi.org/10.1145/2669711.2669982>.

- [169] F. J. García-Peñalvo y J. Cruz-Benito. (2015). *Informe de Buena Práctica - Proyecto Europeo VALS y Semester of Code: Prácticas Virtuales en Empresas y Fundaciones relacionadas con el Software Libre a nivel Europeo*. Disponible en: <http://repositorio.grial.eu/handle/grial/410>.
- [170] F. J. García-Peñalvo y J. Cruz-Benito, "Proyecto Europeo VALS y Semester of Code: Prácticas Virtuales en Empresas y Fundaciones relacionadas con el Software Libre a nivel Europeo (Versión póster)," presentado en Seminario Bienal "La Universidad Digital". Taller de Buenas Prácticas: Presentación de Experiencias, Madrid, 11 de junio, 2015. Disponible: <http://repositorio.grial.eu/handle/grial/409>.
- [171] F. J. García-Peñalvo *et al.*, "VALS: Virtual Alliances for Learning Society," en *Proceedings of the TEEM'13 Track on Knowledge Society Related Projects*, F. J. García-Peñalvo, A. García-Holgado y J. Cruz-Benito, Eds. pp. 19-26, Salamanca, Spain: Grupo GRIAL, 2013.
- [172] F. J. García-Peñalvo, J. Cruz-Benito, M. Á. Conde y D. Griffiths, "Semester of Code: Piloting Virtual Placements for Informatics across Europe," en *Proceedings of Global Engineering Education Conference, EDUCON 2015. Tallinn, Estonia, 18-20 March 2015* pp. 567-576, USA: IEEE, 2015. doi: 10.1109/EDUCON.2015.7096026.
- [173] F. J. García-Peñalvo, J. Cruz-Benito, M. Á. Conde y D. Griffiths, "Virtual placements for informatics students in open source business across Europe," en *2014 IEEE Frontiers in Education Conference Proceedings (October 22-25, 2014 Madrid, Spain)* pp. 2551-2555, USA: IEEE, 2014. doi: 10.1109/FIE.2014.7044411.
- [174] F. J. García-Peñalvo, J. Cruz-Benito, D. Griffiths y A. P. Achilleos, "Tecnología al servicio de un proceso de gestión de prácticas virtuales en empresas: Propuesta y primeros resultados del Semester of Code," *IEEE VAEP-RITA*, vol. 3, no. 1, pp. 52-59, 2015.
- [175] F. J. García-Peñalvo, J. Cruz-Benito, D. Griffiths y A. P. Achilleos, "Virtual placements management process supported by technology: Proposal and firsts results of the Semester of Code," *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje (IEEE RITA)*, vol. 11, no. 1, pp. 47-54, 2016. doi: 10.1109/RITA.2016.2518461.
- [176] F. J. García-Peñalvo, "Entrepreneurial and problem solving skills in software engineers," *Journal of Information Technology Research*, vol. 8, no. 3, pp. iv-vi, 2015.
- [177] F. J. García-Peñalvo *et al.*, "Understanding the barriers to virtual student placements in the Semester of Code," *Education in the Knowledge Society*, vol. 17, no. 1, pp. 147-173, 2016. doi: 10.14201/eks2016171147173.
- [178] F. J. García-Peñalvo y N. A. Kearney, "Networked youth research for empowerment in digital society. The WYRED project," en *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) (Salamanca, Spain, November 2-4, 2016)*, F. J. García-Peñalvo, Ed. ACM International Conference Proceeding Series (ICPS), pp. 3-9, New York, NY, USA: ACM, 2016. doi: 10.1145/3012430.3012489.
- [179] F. J. García-Peñalvo, "WYRED Project," *Education in the Knowledge Society*, vol. 18, no. 3, pp. 7-14, 2017. doi: 10.14201/eks2017183714.
- [180] F. J. García-Peñalvo y J. Durán-Escudero, "Interaction design principles in WYRED platform," en *Learning and Collaboration Technologies. Technology in Education. 4th International Conference, LCT 2017. Held as Part of HCI International 2017, Vancouver, BC, Canada, July 9-14, 2017. Proceedings, Part II*, P. Zaphiris y A. Ioannou, Eds. Lecture Notes in Computer Science, no. 10296, pp. 371-381, Switzerland: Springer International Publishing, 2017. doi: 10.1007/978-3-319-58515-4_29.
- [181] F. J. García-Peñalvo, A. García-Holgado, A. Vázquez-Ingelmo y A. M. Seoane-Pardo, "Usability test of WYRED Platform," en *Learning and Collaboration Technologies. Design, Development and Technological Innovation. 5th International Conference, LCT 2018, Held as Part of HCI International 2018, Las Vegas, NV, USA, July 15-20, 2018. Proceedings, Part I*, P. Zaphiris y A. Ioannou, Eds. Lecture Notes in Computer

- Science, no. 10924, pp. 73-84, Cham, Switzerland: Springer, 2018. doi: 10.1007/978-3-319-91743-6_5.
- [182] A. García-Holgado y F. J. García-Peñalvo, "WYRED Platform, the ecosystem for the young people," presentado en HCI International 2018, Las Vegas, NV, USA, July 15-20, 2018, 2018. Disponible: <https://youtu.be/TRDjN5boky8>. doi: 10.5281/zenodo.1322032.
- [183] D. Griffiths *et al.*, "Children and Young People Today: Initial Insights from the WYRED Project," WYRED Consortium, European Union, 2017. Disponible en: <https://goo.gl/6unxmD>. doi: 10.5281/zenodo.996356.
- [184] F. J. García-Peñalvo, "En clave de innovación educativa. Construyendo el nuevo ecosistema de aprendizaje," presentado en I Congreso Internacional de Tendencias en Innovación Educativa, CITIE 2016, Arequipa, Perú, 15 de noviembre de 2016, 2016. Disponible: <https://goo.gl/8HQovc>.
- [185] A. García-Holgado y F. J. García-Peñalvo, "A metamodel proposal for developing learning ecosystems," en *Learning and Collaboration Technologies. Novel Learning Ecosystems. 4th International Conference, LCT 2017. Held as Part of HCI International 2017, Vancouver, BC, Canada, July 9–14, 2017. Proceedings, Part I*, P. Zaphiris y A. Ioannou, Eds. Lecture Notes in Computer Science, no. 10295, pp. 100-109, Switzerland: Springer International Publishing, 2017. doi: 10.1007/978-3-319-58509-3_10.
- [186] A. García-Holgado y F. J. García-Peñalvo, "Preliminary validation of the metamodel for developing learning ecosystems," en *Fifth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'17) (Cádiz, Spain, October 18-20, 2017)* J. M. Dodero, M. S. Ibarra Sáiz y I. Ruiz Rube, Eds. ACM International Conference Proceeding Series (ICPS), New York, NY, USA: ACM, 2017. doi: 10.1145/3144826.3145439.
- [187] A. García-Holgado y F. J. García-Peñalvo, "Definición de ecosistemas de aprendizaje independientes de plataforma," en *La innovación docente como misión del profesorado. Actas del IV Congreso Internacional sobre Aprendizaje, Innovación y Competitividad. CINAIC 2017 (4-6 de Octubre de 2017, Zaragoza, España)*, M. L. Sein-Echaluce Lacleta, Á. Fidalgo-Blanco y F. J. García-Peñalvo, Eds. pp. 668-673, Zaragoza, España: Servicio de Publicaciones Universidad de Zaragoza, 2017. doi: 10.26754/CINAIC.2017.000001_143.
- [188] A. García-Holgado y F. J. García-Peñalvo, "Gestión del conocimiento abierto mediante ecosistemas tecnológicos basados en soluciones Open Source," en *Ecosistemas del Conocimiento Abierto*, J. A. Merlo Vega, Ed. Aquilafuente, no. 228, pp. 147-160, Salamanca, España: Ediciones Universidad de Salamanca, 2018.
- [189] A. García-Holgado y F. J. García-Peñalvo, "Learning ecosystem metamodel quality assurance," en *Trends and Advances in Information Systems and Technologies*, vol. 1, Á. Rocha, H. Adeli, L. P. Reis y S. Costanzo, Eds. Advances in Intelligent Systems and Computing, no. AISC 745, pp. 787-796, Cham: Springer, 2018. doi: 10.1007/978-3-319-77703-0_78.
- [190] F. J. García-Peñalvo, "La evolución de los sistemas software educativos: Los ecosistemas tecnológicos de aprendizaje," presentado en Programa de Doctorado en Ingeniería Informática de la Universidad Complutense de Madrid, Madrid, España, 28 de abril de 2017, 2017. Disponible: <https://goo.gl/Ykwrtv>. doi: 10.5281/zenodo.569347.
- [191] A. García-Holgado y F. J. García-Peñalvo, "Validation of the learning ecosystem metamodel using transformation rules," *Future Generation Computer Systems*, vol. 91, pp. 300-310, 2019. doi: 10.1016/j.future.2018.09.011.
- [192] A. García-Holgado, I. Tajes Reiris, N. A. Kearney, C. Martinus y F. J. García-Peñalvo, "An App to Support Yoga Teachers to Implement a Yoga-Based Approach to Promote Wellbeing Among Young People: Usability Study," en *Learning and Collaboration Technologies. Design, Experiences. 6th International Conference, LCT 2019, Held as Part of the 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26–31, 2019. Proceedings, Part I*, P. Zaphiris y A. Ioannou, Eds. Lecture Notes in

- Computer Science, no. LNCS 11590, pp. 38-49, Cham, Switzerland: Springer Nature, 2019. doi: 10.1007/978-3-030-21814-0_4.
- [193] F. J. García-Peñalvo, "Proyecto TACCLE3 – Coding," en *XVIII Simposio Internacional de Informática Educativa, SIEE 2016*, F. J. García-Peñalvo y J. A. Mendes, Eds. no. 222, pp. 187-189, Salamanca, España: Ediciones Universidad de Salamanca, 2016.
- [194] F. J. García-Peñalvo, "Presentación del Proyecto TACCLE3 Coding," presentado en Workshop EI<18. Educación en Informática sub 18, Salamanca, España, 2016. Disponible: <https://goo.gl/VZc6mZ>. doi: 10.5281/zenodo.163216.
- [195] F. J. García-Peñalvo. (2016). *Presentation of the TACCLE3 Coding European Project*. Disponible en: <http://repositorio.grial.eu/handle/grial/654>.
- [196] F. J. García-Peñalvo, "A brief introduction to TACCLE 3 – Coding European Project," en *2016 International Symposium on Computers in Education (SIEE 16)*, F. J. García-Peñalvo y J. A. Mendes, Eds., USA: IEEE, 2016. doi: 10.1109/SIEE.2016.7751876.
- [197] F. J. García-Peñalvo *et al.*, "Evaluation of existing resources (study/analysis)," TACCLE3 Consortium, Belgium, 2016. doi: 10.5281/zenodo.163112.
- [198] F. J. García-Peñalvo, D. Reimann, M. Tuul, A. Rees y I. Jormanainen, "An overview of the most relevant literature on coding and computational thinking with emphasis on the relevant issues for teachers," TACCLE3 Consortium, Belgium, 2016. doi: 10.5281/zenodo.165123.
- [199] F. J. García-Peñalvo y J. Cruz-Benito, "Computational thinking in pre-university education," en *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) (Salamanca, Spain, November 2-4, 2016)*, F. J. García-Peñalvo, Ed. ICPS: ACM International Conference Proceeding Series, pp. 13-17, New York, NY, USA: ACM, 2016. doi: 10.1145/3012430.3012490.
- [200] F. J. García-Peñalvo, A. M. Rees, J. Hughes, I. Jormanainen, T. Toivonen y J. Vermeersch, "A survey of resources for introducing coding into schools," en *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) (Salamanca, Spain, November 2-4, 2016)*, F. J. García-Peñalvo, Ed. pp. 19-26, New York, NY, USA: ACM, 2016. doi: 10.1145/3012430.3012491.
- [201] F. J. García-Peñalvo y J. A. Mendes, "Exploring the computational thinking effects in pre-university education," *Computers in Human Behavior*, vol. 80, pp. 407-411, 2018. doi: 10.1016/j.chb.2017.12.005.
- [202] J. M. Toribio Guzmán, A. García-Holgado, F. Soto Pérez, F. J. García-Peñalvo y M. A. Franco Martín, "Estudio de Usabilidad de la Red Social Privada SocialNet mediante Evaluación Heurística," en *Actas del XVII Congreso Internacional de Interacción Persona-Ordenador - Interacción 2016. 14-16 de septiembre de 2016, Salamanca, España*, L. Moreno López, E. J. Rubia Cuestas, V. M. R. Penichet y F. J. García-Peñalvo, Eds. Aquilafuente, no. 221, pp. 75-77, Salamanca, España: Ediciones Universidad de Salamanca, 2016.
- [203] J. M. Toribio Guzmán, A. García-Holgado, F. Soto Pérez, F. J. García-Peñalvo y M. A. Franco Martín, "Study of the Usability of the Private Social Network SocialNet using Heuristic Evaluation," en *Proceedings of the Interacción '16 Proceedings of the XVII International Conference on Human Computer Interaction (Salamanca, Spain — September 13 - 16, 2016)*, L. Moreno López, E. J. Rubia Cuestas, V. M. R. Penichet y F. J. García-Peñalvo, Eds. ACM International Conference Proceedings Series (ICPS), New York, NY, USA: ACM, 2016. doi: 10.1145/2998626.2998674.
- [204] J. M. Toribio-Guzmán, A. García-Holgado, F. Soto Pérez, F. J. García-Peñalvo y M. Á. Franco Martín, "Heuristic evaluation of SocialNet, the private social network for psychiatric patients and their relatives," en *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) (Salamanca, Spain, November 2-4, 2016)*, F. J. García-Peñalvo, Ed. ICPS: ACM International Conference Proceeding Series, pp. 525-532, New York, NY, USA: ACM, 2016. doi: 10.1145/3012430.3012568.

- [205] S. Marcos-Pablos, A. García-Holgado y F. J. García-Peñalvo, "Trends in European research projects focused on technological ecosystems in the health sector," en *Proceedings TEEM'18. Sixth International Conference on Technological Ecosystems for Enhancing Multiculturality (Salamanca, Spain, October 24th-26th, 2018)*, F. J. García-Peñalvo, Ed. pp. 495-503, New York, NY, USA: ACM, 2018. doi: 10.1145/3284179.3284263.
- [206] S. Marcos-Pablos y F. J. García-Peñalvo, "Decision support tools for SLR search string construction," en *Proceedings TEEM'18. Sixth International Conference on Technological Ecosystems for Enhancing Multiculturality (Salamanca, Spain, October 24th-26th, 2018)*, F. J. García-Peñalvo, Ed. pp. 660-667, New York, NY, USA: ACM, 2018. doi: 10.1145/3284179.3284292.
- [207] S. Marcos-Pablos y F. J. García-Peñalvo, "Information retrieval methodology for aiding scientific database search," *Soft Computing*, vol. 24, no. 8, pp. 5551–5560, 2020. doi: 10.1007/s00500-018-3568-0.
- [208] S. Marcos-Pablos y F. J. García-Peñalvo, "Technological Ecosystems in Care and Assistance: A Systematic Literature Review," *Sensors*, vol. 19, no. 3, art. 708, 2019. doi: 10.3390/s19030708.
- [209] F. Michavila, M. Martín-González, J. M. Martínez, F. J. García-Peñalvo y J. Cruz-Benito, "Analyzing the employability and employment factors of graduate students in Spain: The OEEU Information System," en *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves y M. C. Felgueiras, Eds. pp. 277-283, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808622.
- [210] F. Michavila, J. M. Martínez, M. Martín-González, F. J. García-Peñalvo y J. Cruz-Benito, *Barómetro de empleabilidad y empleo de los universitarios en España, 2015 (Primer informe de resultados)*. Madrid: Observatorio de Empleabilidad y Empleo Universitarios, 2016.
- [211] F. Michavila, J. M. Martínez, M. Martín-González, F. J. García-Peñalvo y J. Cruz-Benito, "Empleabilidad de los titulados universitarios en España. Proyecto OEEU," *Education in the Knowledge Society*, vol. 19, no. 1, pp. 21-39, 2018. doi: 10.14201/eks20181912139.
- [212] F. Michavila, J. M. Martínez, M. Martín-González, F. J. García-Peñalvo, J. Cruz-Benito y A. Vázquez-Ingelmo, *Barómetro de empleabilidad y empleo universitarios. Edición Máster 2017*. Madrid, España: Observatorio de Empleabilidad y Empleo Universitarios, 2018. Disponible en: <https://goo.gl/qK3kqo>.
- [213] J. Cruz-Benito, J. C. Sánchez-Prieto, A. Vázquez-Ingelmo, R. Therón, F. J. García-Peñalvo y M. Martín-González, "How different versions of layout and complexity of web forms affect users after they start it? A pilot experience," en *Trends and Advances in Information Systems and Technologies*, vol. 2, Á. Rocha, H. Adeli, L. P. Reis y S. Costanzo, Eds. *Advances in Intelligent Systems and Computing*, no. AISC 746, pp. 971-979, Cham: Springer, 2018. doi: 10.1007/978-3-319-77712-2_92.
- [214] A. Vázquez-Ingelmo, J. Cruz-Benito y F. J. García-Peñalvo, "Improving the OEEU's data-driven technological ecosystem's interoperability with GraphQL," en *Fifth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'17) (Cádiz, Spain, October 18-20, 2017)* J. M. Dodero, M. S. Ibarra Sáiz y I. Ruiz Rube, Eds. ACM International Conference Proceedings Series (ICPS), New York, NY, USA: ACM, 2017. doi: 10.1145/3144826.3145437.
- [215] A. Vázquez-Ingelmo, J. Cruz-Benito, F. J. García-Peñalvo y M. Martín-González, "Scaffolding the OEEU's Data-Driven Ecosystem to Analyze the Employability of Spanish Graduates," en *Global Implications of Emerging Technology Trends*, F. J. García-Peñalvo, Ed. pp. 236-255, Hershey PA, USA: IGI Global, 2018. doi: 10.4018/978-1-5225-4944-4.ch013.
- [216] A. Camacho Díaz y F. J. García-Peñalvo, "W-STEM Project overview at the International Leadership Summit," presentado en W-STEM International Leadership

- Summit, Cartagena de Indias, Colombia, November 25th, 2019. Disponible: <https://bit.ly/2XIN5pL>. doi: 10.5281/zenodo.3552377.
- [217] A. García-Holgado, A. Camacho Díaz y F. J. García-Peñalvo, "Engaging women into STEM in Latin America: W-STEM project," en *TEEM'19 Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality (Leon, Spain, October 16th-18th, 2019)*, M. A. Conde-González, F. J. Rodríguez-Sedano, C. Fernández-Llamas y F. J. García-Peñalvo, Eds. ICPS: ACM International Conference Proceedings Series, pp. 232-239, New York, NY, USA: ACM, 2019. doi: 10.1145/3362789.3362902.
- [218] F. J. García-Peñalvo, "Women and STEM disciplines in Latin America: The W-STEM European Project," *Journal of Information Technology Research*, vol. 12, no. 4, pp. v-viii, 2019.
- [219] F. J. García-Peñalvo, "Innovative Teaching Approaches to attract, engage, and maintain women in STEM: W-STEM project," presentado en Coimbra Group Seminar. Innovation in Learning and Teaching in Science, Technology, Engineering and Mathematics (STEM) fields, Granada, Spain, 14 November 2019, 2019. Disponible: <https://bit.ly/2NWGFyA>. doi: 10.5281/zenodo.3538939.
- [220] F. J. García-Peñalvo, A. Bello, Á. Domínguez y R. Romero Chacón, "W-STEM International Leadership Summit World Café Report," W-STEM Consortium, Brussels, Belgium, Technical Report, 2019. Disponible en: <https://bit.ly/2RMAHUy>. doi: 10.5281/zenodo.3575091.
- [221] A. García-Holgado, A. Camacho Díaz y F. J. García-Peñalvo, "La brecha de género en el sector STEM en América Latina: Una propuesta europea," en *Actas del V Congreso Internacional sobre Aprendizaje, Innovación y Competitividad. CINAIC 2019 (9-11 de Octubre de 2019, Madrid, España)*, M. L. Sein-Echaluce Lacleta, Á. Fidalgo-Blanco y F. J. García-Peñalvo, Eds. pp. 704-709, Zaragoza, Spain: Servicio de Publicaciones Universidad de Zaragoza, 2019. doi: 10.26754/CINAIC.2019.0143.
- [222] F. J. García-Peñalvo, A. Bello, Á. Domínguez y R. Romero Chacón, "Informe del W-STEM International Leadership Summit World Café. Cartagena de Indias, Colombia, 26 de noviembre de 2019," W-STEM Consortium, Brussels, Belgium, Technical Report, 2020. Disponible en: <https://bit.ly/2Yp7DEg>. doi: 10.5281/zenodo.3892829.
- [223] F. J. García-Peñalvo, A. Bello, A. Dominguez y R. M. Romero Chacón, "Gender Balance Actions, Policies and Strategies for STEM: Results from a World Café Conversation," *Education in the Knowledge Society*, vol. 20, art. 31, pp. 31-1 – 31-15, 2019. doi: 10.14201/eks2019_20_a31.
- [224] A. García-Holgado *et al.*, *Handbook of successful open teaching practices*. European Union: OpenGame Consortium, 2020.
- [225] M. Á. Conde *et al.*, "RoboSTEAM - A Challenge Based Learning Approach for integrating STEAM and develop Computational Thinking," en *TEEM'19 Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality (Leon, Spain, October 16th-18th, 2019)*, M. Á. Conde-González, F. J. Rodríguez-Sedano, C. Fernández-Llamas y F. J. García-Peñalvo, Eds. pp. 24-30, New York, NY, USA: ACM, 2019. doi: 10.1145/3362789.3362893.
- [226] C. Fernández-Llamas y M. Á. Conde-González, "RoboSTEAM Project – A brief review," 2019. Disponible: <https://zenodo.org/record/3531941>. doi: 10.5281/zenodo.3531941.
- [227] F. J. García-Peñalvo, "O3 RoboSTEAM Environment – First overview and discussions," presentado en RoboSTEAM Erasmus+ project Kick-Off, Bragança, Portugal, February 15-16, 2019, 2019. Disponible: <https://goo.gl/hro7tc>. doi: 10.5281/zenodo.2571497.
- [228] M. Á. Conde, F. J. Rodríguez Sedano, C. Fernández-Llamas, J. Gonçalves, J. Lima y F. J. García-Peñalvo, "RoboSTEAM Project Systematic Mapping: Challenge Based Learning and Robotics," en *2020 IEEE Global Engineering Education Conference (EDUCON), (27-30 April 2020, Porto, Portugal)* pp. 214-221, USA: IEEE, 2020. doi: 10.1109/EDUCON45650.2020.9125103.

