

Composante 3 : Diversification des modalités d'enseignement (eLearning stratégique). Présentation des résultats

**María José Rodríguez-Conde
Francisco José García-Peñalvo**

Grupo GRIAL
Instituto Universitario de Ciencias de la Educación
Universidad de Salamanca, Salamanca
[mjrconde, fgarcia]@usal.es

Résumé

Le 7 février 2020, elles ont été présentées au Ministère de l'Éducation Nationale de la Formation Professionnelle de l'Enseignement Supérieur et de la Recherche Scientifique (Rabat), Royaume du Maroc) les résultats de la composante 3 du projet Appui au Système de l'Enseignement supérieur au Maroc dans le cadre d'un rapprochement avec l'Espace européen de l'Enseignement supérieur, entre le Ministère de l'Enseignement supérieur marocain et la Consejería de Educación de la Junta de Castilla y León Cette composante a été dirigée et développée par le groupe GRIAL de l'Université de Salamanca et avait les objectifs suivants : 1) recommander des solutions eLearning dans le contexte universitaire marocain pour aider à résoudre les différents défis auxquels sont confrontées les universités publiques ; et 2) suggérer des méthodologies et des propositions pédagogiques qui améliorent les processus d'enseignement-apprentissage avec le soutien des technologies éducatives. Les résultats complets de ce volet sont inclus dans le rapport final [1].

La présentation aux agents concernés a été organisée dans les sections suivantes :

1. 1Présentation de l'UIC GRIAL

L'Unité Consolidée GRIAL (UIC 081) [2, 3] st un groupe interdisciplinaire, composé de membres permanents qui viennent de différents domaines de connaissance, tels que le génie logiciel, l'informatique, l'éducation, les sciences de l'information, les sciences sociales, etc.

L'activité du groupe GRIAL est orientée vers :

- Mener des projets de R&D&I à la fois individuellement et en consortium avec d'autres institutions et/ou groupes.
- Formation à la demande.
- Services à la demande d'autres institutions et entreprises.

Les principaux axes de recherche du groupe GRIAL sont :

- Analytique visuelle [4-16].
- Qualité et évaluation en éducation [17-25].
- Sciences de l'information [26-35].
- Sciences de l'information [36-50].
- Enseignement médical [51, 52].
- Gestion stratégique des connaissances et des technologies [53-67].
- Humanités numériques [68-71].

- Ingeniería Web et architectures logicielles [[12](#), [72-87](#)].
- Metodologies eLearning [[88-98](#)].
- Responsabilidad social et inclusion [[99-111](#)].
- Sistemas d'apprentissage interactifs [[112-119](#)].
- Technologies d'apprentissage [[7](#), [8](#), [40](#), [41](#), [45](#), [49](#), [120-148](#)].
- Les TIC et l'innovation éducative [[109-111](#), [149-158](#)].

Certains des projets de recherche du groupe le sont :

- Virtual Alliances for Learning Society (VALS) funded by LLP Sub-Programme Erasmus - Knowledge Alliances. 2013-2015. <http://virtualalliances.eu> [[159-168](#)].
- netWorked Youth Research for Empowerment in the Digital society (WYRED) – funded by European Union H2020 Programme. 2016-2019. <https://wyredproject.eu/> [[99](#), [169-173](#)].
- 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 [[174-179](#)].
- 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/> [[180-182](#)].
- *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 [[183-190](#)].
- 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 [[191](#)].
- TACCLE3 - Coding funded by European Union. Erasmus + KA2. 2015-2017. <http://www.taccle3.eu/> [[192-200](#)].
- netWorked Youth Research for Empowerment in the Digital society (WYRED) – funded by European Union H2020 Programme. 2016-2019. <https://wyredproject.eu/> [[99](#), [169-173](#)].
- 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 [[176](#)].
- 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/> [[182](#)].
- Toma de decisiones progresiva visual en humanidades digitales (PROgressive VISual DEcision Making for Digital Humanities). MINECO. Acciones de Programación Conjunta Internacional, del Programa Estatal de I+D+I Orientada a los Retos de la Sociedad, en el marco del Plan Estatal de Investigación Científica y Técnica y de Innovación 2013-2016. 2017-2020. <https://providedh.eu> [[201](#)]

- 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 [[100](#), [101](#), [202-208](#)]

Certains contrats de services seront mis en évidence en raison de leur pertinence particulière :

- Contrat avec l'Institut national d'administration publique pour le développement de son réseau social privé et de sa banque de connaissances [[46](#), [48](#), [133](#), [209](#)].
- Contrat avec la Chaire UNESCO de gestion et de politique universitaire de l'Université polytechnique de Madrid pour développer le Baromètre de l'emploi et de l'employabilité des universités [[118](#), [210-216](#)].

2. Composante 3

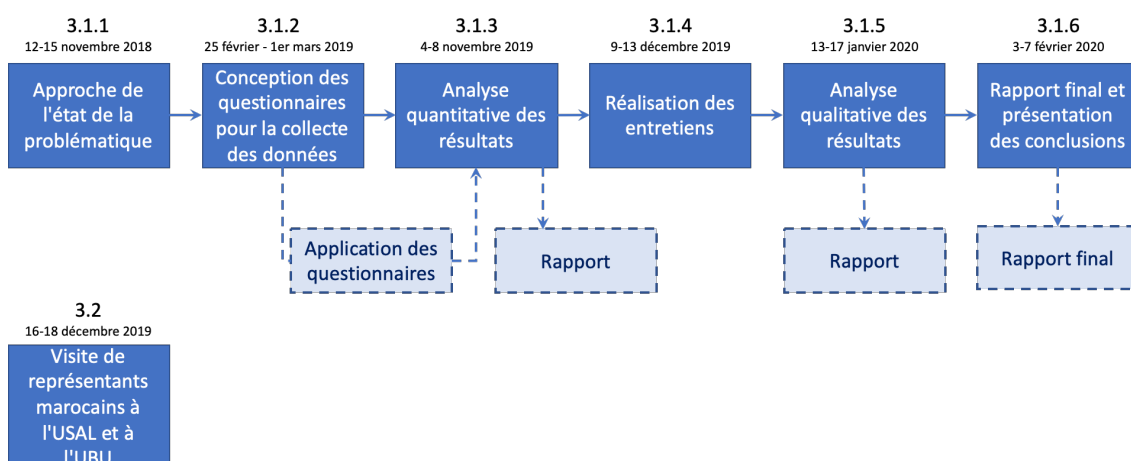
Le projet Appui au Système de l'Enseignement supérieur au Maroc dans le cadre d'un rapprochement avec l'Espace européen de l'Enseignement supérieur vise à moderniser le système d'enseignement supérieur du Royaume du Maroc et l'ouvrir à la scène internationale.

Le projet est organisé en six composantes :

- Composante 1 : rapprochement du cadre législatif de l'UE
- Composante 2 : Diversification de l'offre de formation
- Composante 3 : Diversification des méthodes d'enseignement
- Composante 4 : politique et application ECTS
- Composante 5 : Reconnaissance des diplômes
- Composante 6 : Consolidation des outils pilotes

Plus précisément, le volet 3 se concentre sur les méthodologies d'enseignement et leur relation avec les technologies d'apprentissage, plus précisément sur l'établissement d'une stratégie d'apprentissage en ligne pour le système universitaire public marocain.

La Composante a développé des sessions de travail à Rabat et une visite de membres des universités publiques marocaines à l'Université de Salamanque, comme résumé dans l'image ci-dessous.



3. Modèle de référence pour le eLearning de l'Université de Salamanque

L'objectif étant très axé sur la définition d'une stratégie eLearning, le modèle de référence développé par l'Université de Salamanque est présenté [217].

Les piliers, la structure et les aspects les plus remarquables du modèle de formation à la non fréquentation défini pour l'Université de Salamanque sont présentés, en prenant comme référence [50, 89, 92, 94, 218-223].

Les défis que l'adoption de cette méthodologie implique pour l'institution, les enseignants et les étudiants sont également exposés [224].

4. Résultats

Le rapport final de cette composante [1] présente un processus méthodologique qui part d'une approche initiale de l'état du problème, avec une approche SWOT, pour continuer avec une méthode explicative séquentielle mixte [225, 226]. La partie quantitative est basée sur les rapports UNIVERSITIC produits par les universités espagnoles CRUE [227-229] et sur le modèle TAM [230-233], tandis que la partie qualitative est basée sur le développement de groupes de discussion [106].

Plusieurs instruments [234-239] et rapports partiels [240, 241] ont été élaborés.

5. Recommandations

Il y a 36 recommandations organisées dans les catégories suivantes :

Plan stratégique et modèle de référence pour le développement du eLearning au Royaume du Maroc	Politiques
	Infrastructures technologiques physiques
	Infrastructures technologiques logiques
	Ressources humaines et formation
Massification de l'Université Publique marocaine	
Nouvelle structure des études universitaires de premier cycle	

Mots-clés

Projet de jumelage ; Enseignement supérieur ; eLearning ; Méthodologies d'enseignement ; Technologies d'apprentissage ; Maroc ; GRIAL

Lien vers la présentation

<https://bit.ly/3db1PoJ>

DOI

10.5281/zenodo.3719240

Citation

M. J. Rodríguez-Conde et F. J. García-Peñalvo, "Composante 3 : Diversification des modalités d'enseignement (eLearning stratégique). Présentation des résultats," présenté au Ministère de l'Éducation Nationale de la Formation Professionnelle de l'Enseignement Supérieur et de la Recherche Scientifique (Rabat, Royaume du Maroc), 7 février 2020. Salamanca, Espagne : Groupe GRIAL. 2020. Disponible : <https://bit.ly/3db1PoJ>. doi: 10.5281/zenodo.3719240.

Références

- [1] M. J. Rodríguez-Conde, F. J. García-Peñalvo, A. Gamazo-García, A. García-Holgado, F. Martínez-Abad and J. C. Sánchez-Prieto, "Rapport Final de la Composante 3 Diversification des modalités d'enseignement (stratégie e-learning)," Ministère de l'Éducation Nationale, de la Formation Professionnelle de l'Enseignement Supérieur et de la Recherche Scientifique, Maroc, 2020. Available from: <https://bit.ly/38zomrG>.
- [2] F. J. García-Peñalvo, M. J. Rodríguez-Conde, R. Therón, A. García-Holgado, F. Martínez-Abad and A. Benito-Santos, "Grupo GRIAL," *IE Comunicaciones. Revista Iberoamericana de Informática Educativa*, no. 30, pp. 33-48, 2019.
- [3] Grupo GRIAL, "Producción Científica del Grupo GRIAL de 2011 a 2019," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, GRIAL-TR-2019-010, 2019. Available from: <https://bit.ly/3019mLh>. doi: 10.5281/zenodo.2821407.
- [4] J. García, F. J. García-Peñalvo, R. Therón and 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.
- [5] J. García, A. G. Torres, D. A. G. Aguilar, R. Theron and F. J. G. Penalvo, "A Visual Analytics Tool for Software Project Structure and Relationships among Classes," in *Smart Graphics, Proceedings*, vol. 5531, A. Butz, B. Fisher, M. Christie, A. Kruger, P. Olivier and R. Theron, Eds. Lecture Notes in Computer Science, pp. 203-212, 2009.
- [6] F. J. García-Peñalvo, "Issue on visual analytics," *Journal of Information Technology Research*, vol. 8, no. 2, pp. iv-vi, 2015.
- [7] D. A. Gómez-Aguilar, F. J. García-Peñalvo and 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.
- [8] D. A. Gómez-Aguilar, Á. Hernández-García, F. J. García-Peñalvo and 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.
- [9] A. González-Torres, F. J. García-Peñalvo and R. Therón, "How evolutionary visual software analytics supports knowledge discovery," *Journal of Information Science and Engineering*, vol. 29, no. 1, pp. 17-34, 2013.
- [10] A. González-Torres, F. J. García-Peñalvo and 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.

- [11] A. González-Torres, F. J. García-Peñalvo and R. Therón, "A Framework for the Evolutionary Visual Software Analytics Process," in *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 and 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.
- [12] A. González-Torres, F. J. García-Peñalvo, R. Therón-Sánchez and 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.
- [13] A. González-Torres, R. Therón, F. J. García-Peñalvo, M. Wermelinger and Y. Yu, "Maleku: An evolutionary visual software analytics tool for providing insights into software evolution," in *Proceedings of the 27th IEEE International Conference on Software Maintenance – ICSM 2011 (Williamsburg, VA, USA, September 25 – 30, 2011)*, A. Marcus, J. R. Cordy and P. Tonella, Eds. pp. 594-597, EEUU: IEEE CS Press, 2011. doi: 10.1109/ICSM.2011.6080838.
- [14] F. J. García-Peñalvo, P. Ordóñez de Pablos, J. García and 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.
- [15] F. J. García-Peñalvo, R. Colomo-Palacios, J. García and 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.
- [16] A. Benito Santos, R. Therón, A. Losada, J. E. Sampaio and 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.
- [17] M. J. Rodríguez-Conde, F. Martínez-Abad and 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.
- [18] M. J. Rodríguez-Conde, S. Olmos-Migueláñez, B. García-Riaza, A. B. González-Rogado and F. J. García-Peñalvo, "Students' Active Role on the Assessment of Learning Results in Blended-Learning Environments in Engineering in Spain," in *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 and 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.
- [19] A. B. González-Rogado, M. J. Rodríguez-Conde, S. Olmos-Migueláñez, M. Borham and 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.

- [20] A. B. González-Rogado, M. J. Rodríguez-Conde, S. Olmos-Migueláñez, M. Borham and 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.
- [21] F. Martínez-Abad, S. Olmos-Migueláñez and 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.
- [22] S. Olmos Migueláñez and M. J. Rodríguez Conde, "El profesorado universitario ante la e-evaluación del aprendizaje," *ESE- Estudios sobre Educación*, vol. 23, no. 1, pp. 181-202, 2011.
- [23] H. Barbosa and F. J. García-Peñalvo, "Importance of Online Assessment in the E-Learning Process," in *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.
- [24] H. Barbosa León, F. J. García-Peñalvo, M. J. Rodríguez-Conde, E. M. Morales-Morgado and 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.
- [25] H. G. Barbosa Leon, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Defining adaptive assessments. Construction of adaptive assessments based in the learning style of the students," in *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 and J. Cordeiro, Eds. pp. 409-414, Portugal: INSTICC Press, 2007.
- [26] T. Ferreras-Fernández, J. A. Merlo-Vega and F. J. García-Peñalvo, "Impact of Scientific Content in Open Access Institutional Repositories. A case study of the Repository Gredos," in *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.
- [27] T. Ferreras-Fernández, J. A. Merlo-Vega and F. J. García-Peñalvo, "Visibilidad de la literatura gris científica a través de repositorios. El caso de las tesis doctorales en GREDOS," presented in XV Workshop de REBIUN sobre proyectos digitales y VI Jornadas de OS-Repositorios (11-13 de marzo de 2015), Córdoba, Spain, 2015.
- [28] F. J. García-Peñalvo, J. A. Merlo-Vega, T. Ferreras-Fernández, A. Casaus-Peña, L. Albás-Aso and 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.
- [29] C. López, F. García-Peñalvo and 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.
- [30] T. Ferreras-Fernández, J. A. Merlo-Vega and F. J. García-Peñalvo, "Science 2.0 supported by Open Access Repositories and Open Linked Data," in *Proceedings of the First International Conference on Technological Ecosystems for*

- Enhancing Multiculturalism (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.
- [31] 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. Available from: <https://goo.gl/rrNeEJ>.
- [32] T. Ferreras-Fernández, F. J. García-Peñalvo, J. A. Merlo-Vega and 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.
- [33] T. Ferreras-Fernández, H. Martín-Rodero, F. J. García-Peñalvo and J. A. Merlo-Vega, "The Systematic Review of Literature in LIS: An approach," in *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturalism (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.
- [34] L. I. González-Pérez, L. D. Glasserman Morales, M. S. Ramírez-Montoya and F. J. García-Peñalvo, "Repositorios como soportes para diseminar experiencias de innovación educativa," in *Innovación Educativa. Investigación, formación, vinculación y visibilidad*, M. S. Ramírez-Montoya and J. R. Valenzuela González, Eds. pp. 259-272, Madrid, España: Síntesis, 2017.
- [35] L. I. González-Pérez, M. S. Ramírez-Montoya and 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. Available from: <https://goo.gl/VBxyHj>. doi: 10.5281/zenodo.2602024.
- [36] F. J. García-Peñalvo, "Ecosistemas Tecnológicos," *IEEE VAEP-RITA*, vol. 3, no. 1, pp. 36-37, 2015.
- [37] F. J. García-Peñalvo, "Ecosistemas Tecnológicos: Innovando en la Educación Abierta," presented in 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. Available from: <https://goo.gl/zRma4d>. doi: 10.13140/RG.2.2.21822.28489.
- [38] F. J. García-Peñalvo *et al.*, "Mirando hacia el futuro: Ecosistemas tecnológicos de aprendizaje basados en servicios," in *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 and F. J. García-Peñalvo, Eds. pp. 553-558, Madrid, Spain: Fundación General de la Universidad Politécnica de Madrid, 2015.
- [39] F. J. García-Peñalvo *et al.*, "Enhancing Education for the Knowledge Society Era with Learning Ecosystems," in *Open Source Solutions for Knowledge Management and Technological Ecosystems*, F. J. García-Peñalvo and 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.

- [40] F. J. García-Peñalvo *et al.*, "Learning services-based technological ecosystems," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves and M. C. Felgueiras, Eds. pp. 467-472, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808650.
- [41] A. García-Holgado and F. J. García-Peñalvo, "The evolution of the technological ecosystems: An architectural proposal to enhancing learning processes," in *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.
- [42] A. García-Holgado and F. J. García-Peñalvo, "Análisis de integración de soluciones basadas en software como servicio para la implantación de ecosistemas tecnológicos corporativos," in *Avances en Informática y Automática. Séptimo Workshop*, J. Cruz-Benito, A. García-Holgado, S. García-Sánchez, D. Hernández-Alfageme, M. Navarro-Cáceres and R. Vega-Ruiz, Eds. pp. 55-72, Salamanca: Departamento de Informática y Automática de la Universidad de Salamanca, 2013.
- [43] A. García-Holgado and F. J. García-Peñalvo, "Knowledge management ecosystem based on Drupal platform for promoting the collaboration between public administrations," in *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.
- [44] A. García-Holgado and F. J. García-Peñalvo, "Patrón arquitectónico para la definición de ecosistemas de eLearning basados en desarrollos open source," in *Actas del XVI Simposio Internacional de Informática Educativa (SIIE'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. Doderó Beardo and D. Burgos, Eds. pp. 137-142, 2014.
- [45] A. García-Holgado and F. J. García-Peñalvo, "Architectural pattern for the definition of eLearning ecosystems based on Open Source developments," in *Proceedings of 2014 International Symposium on Computers in Education (SIIE), Logrono, La Rioja, Spain, 12-14 Nov. 2014*, J. L. Sierra-Rodríguez, J. M. Doderó-Beardo and D. Burgos, Eds. pp. 93-98, USA: Institute of Electrical and Electronics Engineers, 2014. doi: 10.1109/SIIE.2014.7017711.
- [46] A. García-Holgado and 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. Available from: <https://goo.gl/NKRMKX>. doi: 10.13140/RG.2.1.5176.2727.
- [47] A. García-Holgado and 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.
- [48] A. García-Holgado, F. J. García-Peñalvo, Á. Hernández-García and F. Llorens-Largo, "Analysis and Improvement of Knowledge Management Processes in Organizations Using the Business Process Model Notation," in *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 and 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.
- [49] A. García-Holgado, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Definition of a technological ecosystem for scientific knowledge management in a PhD Programme," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves and M. C. Felgueiras, Eds. ACM International Conference Proceeding Series (ICPS), pp. 695-700, New York, NY, USA: ACM, 2015. doi: 10.1145/2808580.2808686
- [50] F. J. García-Peñalvo, "Ecosistemas tecnológicos universitarios," in *UNIVERSITIC 2017. Análisis de las TIC en las Universidades Españolas*, J. Gómez, Ed. pp. 164-170, Madrid, España: Crue Universidades Españolas, 2018.
- [51] !!! INVALID CITATION !!! [64-93].
- [52] N. Gómez del Río, C. S. González-González, R. Martín-González, V. Navarro-Adelantado, P. Toledo-Delgado and F. J. García-Peñalvo, "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.
- [53] F. J. García-Peñalvo, C. García de Figuerola and J. A. Merlo-Vega, "Open knowledge management in higher education," *Online Information Review*, vol. 34, no. 4, pp. 517-519, 2010.
- [54] F. J. García-Peñalvo, C. García de Figuerola and J. A. Merlo-Vega, "Open knowledge: Challenges and facts," *Online Information Review*, vol. 34, no. 4, pp. 520-539, 2010. doi: 10.1108/14684521011072963.
- [55] F. J. García-Peñalvo, "La Universidad de la próxima década: La Universidad Digital," in *Universidad y Desarrollo Social de la Web*, C. Suárez-Guerrero and F. J. García-Peñalvo, Eds. pp. 181-197, Washington DC, USA: Editandum, 2011.
- [56] C. Suárez Guerrero and F. J. García Peñalvo Eds., "Universidad y Desarrollo Social de la Web." Washington DC, USA: Editandum, 2011.
- [57] A. J. Berlanga, F. J. García-Peñalvo and 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.
- [58] F. J. García-Peñalvo, M. L. Sein-Echaluce and Á. Fidalgo-Blanco, "Educational Innovation Management. A Case Study at the University of Salamanca," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves and M. C. Felgueiras, Eds. ACM International Conference Proceeding Series (ICPS), pp. 151-158, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808604.
- [59] F. J. García-Peñalvo and S. Rivera, M., "Digital University 2010," in *EUNIS 2009. IT: Key of the European Space of Knowledge. (Santiago de Compostela, Spain, June 23rd - 26th, 2009)*, J. R. Canay, J. Franco and P. J. Rey, Eds. p. 32, Santiago de Compostela, Spain: Universidade de Santiago de Compostela Publicacións, 2009.

- [60] L. Briz Ponce and 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.
- [61] L. Briz Ponce, J. A. Juanes Méndez and F. J. García-Peñalvo, "A systematic review of using mobile devices in medical education," in *Proceedings of 2014 International Symposium on Computers in Education (SIIE), Logrono, La Rioja, Spain, 12-14 Nov. 2014*, J. L. Sierra-Rodríguez, J. M. Doderó-Beardo and D. Burgos, Eds. pp. 205-210, USA: Institute of Electrical and Electronics Engineers, 2014. doi: 10.1109/SIIE.2014.7017731.
- [62] L. Briz Ponce, J. A. Juanes Méndez and F. J. García-Peñalvo, "Analysis of certificated mobile application for medical education purposes," in *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.
- [63] L. Briz Ponce, J. A. Juanes Méndez and 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.
- [64] L. Briz-Ponce and 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.
- [65] L. Briz-Ponce, J. A. Juanes-Méndez and F. J. García-Peñalvo, "Synopsis of discussion session on defining a new quality protocol for medical apps," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves and M. C. Felgueiras, Eds. pp. 7-12, New York, NY, USA: ACM, 2015. doi: 10.1145/2808580.2808582.
- [66] L. Briz-Ponce, A. Pereira, L. Carvalho, J. A. Juanes-Méndez and 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.
- [67] J. C. Sánchez-Prieto, S. Olmos-Migueláñez and 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.
- [68] R. Therón and L. Fontanillo, "Diachronic-information visualization in historical dictionaries," *Information Visualization*, vol. 14, no. 2, pp. 111-136, 2015. doi: 10.1177/1473871613495844.
- [69] F. J. García-Peñalvo, "Digital Humanities Data Processing," *Journal of Information Technology Research*, vol. 9, no. 1, 2016.
- [70] R. Therón, C. Seguí, L. Cruz and M. Vaquero, "Highly interactive and natural user interfaces: enabling visual analysis in historical lexicography," in *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.
- [71] R. Therón and E. Wandl-Vogt, "The fun of exploration:How to access a non-standard language corpus visually," in *VisLR: Visualization as Added Value in*

- the Development, Use and Evaluation of Language Resources*, A. Hautli-Janisz, V. Lyding and C. Rohrdantz, Eds. pp. 9-12, 2014.
- [72] F. J. García-Peñalvo, R. Colomo-Palacios, P. Soto-Acosta, I. Martínez-Conesa and 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.
- [73] Á. Fidalgo-Blanco, M. L. Sein-Echaluce and 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.
- [74] Á. Fidalgo-Blanco, M. L. Sein-Echaluce and 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.
- [75] F. J. García-Peñalvo, M. Á. Conde, M. Johnson and 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.
- [76] F. J. García-Peñalvo, J. Cruz-Benito, O. Borrás-Gené and Á. Fidalgo Blanco, "Evolution of the Conversation and Knowledge Acquisition in Social Networks related to a MOOC Course.," in *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 and 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.
- [77] F. J. García-Peñalvo, J. García and 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.
- [78] F. J. García-Peñalvo, M. A. Conde, M. Alier and 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.
- [79] M. J. Casany, M. Alier, M. Á. Conde and F. J. García-Peñalvo, "SOA initiatives for eLearning. A Moodle case," in *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.
- [80] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Casany Guerrero and M. Alier Forment, "Back and Forth: From the LMS to the Mobile Device. A SOA Approach," in *Proceedings of the IADIS International Conference Mobile Learning 2009 (Barcelona, Spain, February 26-28, 2009)*, I. Arnedillo Sánchez and P. Isaías, Eds. pp. 114-120, Portugal: IADIS Press, 2009.
- [81] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Casany and M. Alier, "Adapting LMS architecture to the SOA: an Architectural Approach," in *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 and O. Dini, Eds. pp. 322-327, Los Alamitos, California, USA: IEEE Computer Society, 2009. doi: 10.1109/iciw.2009.54.
- [82] E. M. Morales-Morgado, A. B. Gil and F. J. García-Peñalvo, "Arquitectura para la Recuperación de Objetos de Aprendizaje de Calidad en Repositorios Distribuidos," in *Actas del 5º Taller en Sistemas Hipermedia Colaborativos y Adaptativos, SHCA 2007*, vol. 1, F. Gutiérrez Vela and P. Paderewski Rodríguez, Eds. Actas de Talleres de Ingeniería del Software y Bases de Datos, SISTEDES, no. 1, pp. 31-38, Zaragoza, España, 2007.
- [83] R. Colomo-Palacios, C. Casado-Lumbreras, P. Soto-Acosta, F. J. García-Peñalvo and 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.
- [84] M. Á. Conde, D. A. Gómez, A. D. de Dios and 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," in *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.
- [85] J. Cruz-Benito, O. Borrás-Gené, F. J. García-Peñalvo, Á. Fidalgo-Blanco and R. Therón, "Extending MOOC ecosystems using web services and software architectures.," in *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.
- [86] J. Piguillem *et al.*, "Moodbile: A Moodle web services extension for mobile applications," in *Proceedings of the 1st Moodle Research Conference (Heraklion, Crete, Greece, September, 14-15, 2012)*, S. Retalis and M. Dougiamas, Eds. pp. 148-156, 2012.
- [87] 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.
- [88] F. J. García-Peñalvo, "Estado actual de los sistemas E-Learning," *Education in the Knowledge Society*, vol. 6, no. 2, 2005.
- [89] F. J. García-Peñalvo Ed. "Advances in E-Learning: Experiences and methodologies." Hershey, PA, USA: Information Science Reference (formerly Idea Group Reference), 2008.
- [90] A. M. Seoane-Pardo and 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.
- [91] A. M. Seoane-Pardo and F. J. García-Peñalvo, "Philosophical and Epistemological Basis for Building a Quality Online Training Methodology," in *Advances in E-Learning: Experiences and Methodologies*, F. J. García-Peñalvo, Ed. pp. 46-60, Hershey, PA, USA: Information Science Reference 2008.
- [92] F. J. García-Peñalvo and 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.

- [93] F. J. García-Peñalvo and 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.
- [94] A. M. Seoane-Pardo and F. J. García-Peñalvo, "Pedagogical Patterns and Online Teaching," in *Online Tutor 2.0: Methodologies and Case Studies for Successful Learning*, F. J. García-Peñalvo and 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.
- [95] A. M. Seoane-Pardo and F. J. García-Peñalvo, "Patrones pedagógicos y docencia en red," in *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.
- [96] 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. Available from: <https://goo.gl/sNrKHu>.
- [97] A. M. Seoane-Pardo and F. J. García-Peñalvo, "Online Tutoring and Mentoring," in *Encyclopedia of Networked and Virtual Organizations*, vol. II, G. D. Putnik and M. M. Cunha, Eds. pp. 1120-1127, Hershey, PA, USA: Information Science Reference, 2008.
- [98] J. Cruz-Benito, R. Therón, F. J. García-Peñalvo and 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.
- [99] F. J. García-Peñalvo, "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.
- [100] F. J. García-Peñalvo, M. Franco Martín, A. García-Holgado, J. M. Toribio Guzmán, J. Largo Antón and 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.
- [101] J. M. Toribio-Guzmán, A. García-Holgado, F. Soto Pérez, F. J. García-Peñalvo and 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.
- [102] P. No-Gutiérrez, M. J. Rodríguez Conde, V. Zangrando and A. M. Seoane-Pardo, "EERA: Peer Tutoring With Migrant Students: Intercultural Mentoring Programme," presented in ECER 2015 "Education and Transition. Contributions from Educational Research", Budapest, Hungary, 2015. Available from: <https://goo.gl/VZc6mZ>.
- [103] P. No-Gutiérrez, M. J. Rodríguez Conde, V. Zangrando, A. M. Seoane-Pardo and L. Luatti, "Peer tutoring at school with migrant students: intercultural mentoring programme," in *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. 483-487, New York, NY, USA: ACM, 2014. doi: 10.1145/2669711.2669943.

- [104] M. Martín-Cilleros and 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.
- [105] J. L. Muñoz-Sánchez, M. C. Sánchez-Gómez, M. V. Martín-Cilleros, C. Blanco-Dorado and 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.
- [106] M. C. Sánchez-Gómez and M. V. Martín-Cilleros, "Implementation of Focus Group in Health Research," in *Computer supported qualitative research*, A. P. Costa, L. P. Reis, F. Neri de Sousa, A. Moreira and 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.
- [107] 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," in *La Práctica de la investigación cualitativa: Ejemplificación de estudios*, A. P. Costa, M. C. Sánchez-Gómez and M. V. Martín-Cilleros, Eds. pp. 57-92, Aveiro, Portugal: Ludomedia, 2017.
- [108] P. Zapata-Sepúlveda, F. López-Sánchez and 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.
- [109] A. García-Holgado, J. J. Mena Marcos, F. J. García-Peñalvo and C. González, "Inclusion of gender perspective in Computer Engineering careers. Elaboration of a questionnaire to assess the gender gap in Tertiary Education," in *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.
- [110] A. García-Holgado, F. J. García-Peñalvo, J. J. Mena Marcos and C. González, "Introducción de la Perspectiva de Género en la docencia de Ingeniería del Software," in *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 and F. J. García-Peñalvo, Eds. pp. 627-631, Zaragoza, España: Servicio de Publicaciones Universidad de Zaragoza, 2017. doi: 10.26754/CINAIC.2017.000001_134.
- [111] A. García-Holgado, F. J. García-Peñalvo, J. J. Mena Marcos and C. González, "Inclusión de la perspectiva de género en la asignatura de Ingeniería de Software I," in "Memorias de Innovación Docente," núm. ID2016/084, Universidad de Salamanca, Salamanca, España, 2017. Available from: <https://goo.gl/PzZeAN>.
- [112] A. J. Berlanga and 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.
- [113] A. J. Berlanga and F. J. García-Peñalvo, "IMS LD reusable elements for adaptive learning designs," *Journal of Interactive Media in Education*, vol. 11, 2005.

- [114] A. J. Berlanga and 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.
- [115] A. J. Berlanga, F. J. García-Peñalvo and J. Carabias, "Authoring adaptive learning designs using IMS LD," in *Adaptive Hypermedia and Adaptive Web-Based Systems. 4th International Conference, AH 2006, Proceedings (Dublin, Ireland, June 21-23, 2006)*, V. Wade, H. Ashman and B. Smyth, Eds. Lecture Notes in Computer Science, no. LNCS 4018, pp. 31-40, Berlin: Springer Verlag, 2006. doi: 10.1007/11768012_5.
- [116] A. Berlanga and F. J. García-Peñalvo, "An open model to define adaptive educational hypermedia systems based on learning technology specifications," in *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.
- [117] F. J. García-Peñalvo, R. Colomo-Palacios and J. Y. J. Hsu, "Discovering knowledge through highly interactive information based systems foreword," *Journal of Information Science and Engineering*, vol. 29, no. 1, 2013.
- [118] J. Cruz-Benito, A. Vázquez-Ingelmo, J. C. Sánchez-Prieto, R. Therón, F. J. García-Peñalvo and 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.
- [119] A. Vázquez-Ingelmo, F. J. García-Peñalvo, R. Therón, D. Amo-Filvà and 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.
- [120] M. Alier Forment, M. J. Casany Guerrero, M. Á. Conde González, F. J. García-Peñalvo and 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.
- [121] 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.
- [122] F. J. García-Peñalvo and 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.
- [123] 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.
- [124] J. C. Sánchez-Prieto, S. Olmos-Migueláñez and 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.
- [125] J. C. Sánchez-Prieto, S. Olmos-Migueláñez and 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.

- [126] D. A. Gómez-Aguilar, R. Therón and F. J. García-Peñalvo, "Understanding educational relationships in Moodle with ViMoodle," in *Proceedings of the Eighth IEEE International Conference on Advanced Learning Technologies, 2008. ICAALT '08. Santander, Cantabria, Spain, 1-5 July 2008*, P. Díaz, A. Ignacio and E. Mora, Eds. pp. 954-956, USA: IEEE, 2008. doi: 10.1109/ICALT.2008.276.
- [127] D. A. Gómez-Aguilar, R. Therón and 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.
- [128] Á. Fidalgo-Blanco, F. J. García-Peñalvo and M. L. Sein-Echaluce Lacleta, "A methodology proposal for developing adaptive cMOOC," in *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.
- [129] Á. Fidalgo-Blanco, M. L. Sein-Echaluce Lacleta, O. Borrás Gené and 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.
- [130] Á. Fidalgo-Blanco, M. L. Sein-Echaluce Lacleta and F. J. García-Peñalvo, "MOOC cooperativo. Una integración entre cMOOC y xMOOC," in *Actas del II Congreso Internacional sobre Aprendizaje, Innovación y Competitividad (CINAIC)*, Á. Fidalgo Blanco and M. L. Sein-Echaluce Lacleta, Eds. pp. 481-486, Madrid, Spain: Fundación General de la Universidad Politécnica de Madrid, 2013.
- [131] Á. Fidalgo-Blanco, M. L. Sein-Echaluce Lacleta and 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.
- [132] 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.
- [133] A. García-Holgado, J. Cruz-Benito and F. J. García-Peñalvo, "Analysis of knowledge management experiences in Spanish public administration," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)* G. R. Alves and M. C. Felgueiras, Eds. International Conference Proceedings Series, pp. 189-193, New York, NY, USA: ACM, 2015. doi: 10.1145/2808580.2808609.
- [134] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Rodríguez-Conde, M. Alier and 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.
- [135] E. M. Morales-Morgado, D. Gómez-Aguilar and F. J. García-Peñalvo, "HEODAR: Herramienta para la Evaluación de Objetos Didácticos de Aprendizaje Reutilizables," in *Actas del X Simposio Internacional de Informática Educativa - SIIIE'08* J. Á. Velázquez-Iturbide, F. J. García-Peñalvo and A. B. Gil, Eds. Colección Aquilafuente, Salamanca, España: Ediciones Universidad de Salamanca, 2008.

- [136] C. Muñoz, M. Á. Conde and 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.
- [137] C. Muñoz, F. J. García-Peñalvo, E. M. Morales-Morgado, M. Á. Conde-González and 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.
- [138] E. M. Morales, F. J. García-Peñalvo, Á. Barrón, A. J. Berlanga and C. López, "Propuesta de Evaluación de Objetos de Aprendizaje," in *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.
- [139] F. J. García-Peñalvo and 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.
- [140] P. R. Humanante-Ramos, F. J. García-Peñalvo and M. Á. Conde González, "Towards mobile personal learning environments (MPLE) in higher education," in *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.
- [141] P. R. Humanante-Ramos, F. J. García-Peñalvo and 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.
- [142] P. R. Humante-Ramos, F. J. García-Peñalvo and M. Á. Conde-González, "Mobile personal learning environments: conceptualization and structure," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves and M. C. Felgueiras, Eds. ACM International Conference Proceeding Series (ICPS), pp. 117-123, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808599.
- [143] M. Á. Conde-González, F. J. García-Peñalvo, M. J. Rodríguez-Conde, M. Alier, M. J. Casany and 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.
- [144] F. J. García-Peñalvo and 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.
- [145] Á. Fidalgo-Blanco, M. L. Sein-Echaluce and 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.

- [146] F. J. García-Peñalvo, Á. Fidalgo-Blanco, M. Sein-Echaluce Laclleta and M. Á. Conde-González, "Cooperative Micro Flip Teaching," in *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 and 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.
- [147] M. L. Sein-Echaluce Laclleta, Á. Fidalgo-Blanco, F. J. García-Peñalvo and M. Á. Conde-González, "iMOOC Platform: Adaptive MOOCs," in *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 and 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.
- [148] J. C. Sánchez-Prieto, F. Huang, S. Olmos-Migueláñez, F. J. García-Peñalvo and 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.
- [149] S. Verdugo-Castro, M. C. Sánchez-Gómez and A. García- Holgado, "Gender gap in the STEM sector in pre and university studies of Europe associated with ethnic factors," in *Sixth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM 2018)*, Salamanca, Spain, 2018: ACM
- [150] F. J. García-Peñalvo, "Innovación educativa. Decisiones estratégicas," presented in Seminario Innovación Educativa: En Busca de los Indicadores Perdidos (7 de mayo de 2014), Zaragoza, España, 2014. Available from: <https://goo.gl/pG9xMk>.
- [151] 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.
- [152] F. J. García-Peñalvo, "Aprendizaje Servicio. Una experiencia en Gobierno TI," presented in 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. Available from: <https://goo.gl/M1XVCB>. doi: 10.5281/zenodo.1009676.
- [153] F. J. García-Peñalvo, "Innovación educativa," in *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.
- [154] F. J. García-Peñalvo, Á. Fidalgo-Blanco and M. L. Sein-Echaluce, "Tendencias en Innovación Educativa," presented in III Congreso Internacional sobre Aprendizaje, Innovación y Competitividad, CINAIC 2015, (14-16 de octubre de 2015), Madrid, España, 2015. Available from: <https://goo.gl/5wUaFd>.
- [155] F. J. García-Peñalvo and 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.

- [156] F. J. García-Peñalvo, A. Sarasa Cabezuelo and 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.
- [157] M. S. Ramírez-Montoya and F. J. García-Peñalvo, "Movimiento Educativo Abierto," *Virtualis*, vol. 6, no. 12, pp. 1-13, 2015.
- [158] M. S. Ramírez-Montoya, F. J. García-Peñalvo and R. McGreal, "Shared Science and Knowledge. Open Access, Technology and Education," *Comunicar*, vol. 26, no. 54, pp. 1-5, 2018.
- [159] F. J. García-Peñalvo *et al.*, "Developing Win-Win Solutions for Virtual Placements in Informatics: The VALS Case," in *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>.
- [160] F. J. García-Peñalvo and 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*. Available from: <http://repositorio.grial.eu/handle/grial/410>.
- [161] F. J. García-Peñalvo and 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)," presented in Seminario Bienal "La Universidad Digital". Taller de Buenas Prácticas: Presentación de Experiencias, Madrid, 11 de junio, 2015. Available from: <http://repositorio.grial.eu/handle/grial/409>.
- [162] F. J. García-Peñalvo *et al.*, "VALS: Virtual Alliances for Learning Society," in *Proceedings of the TEEM'13 Track on Knowledge Society Related Projects*, F. J. García-Peñalvo, A. García-Holgado and J. Cruz-Benito, Eds. pp. 19-26, Salamanca, Spain: Grupo GRIAL, 2013.
- [163] F. J. García-Peñalvo, J. Cruz-Benito, M. Á. Conde and D. Griffiths, "Semester of Code: Piloting Virtual Placements for Informatics across Europe," in *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.
- [164] F. J. García-Peñalvo, J. Cruz-Benito, M. Á. Conde and D. Griffiths, "Virtual placements for informatics students in open source business across Europe," in *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.
- [165] F. J. García-Peñalvo, J. Cruz-Benito, D. Griffiths and 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.
- [166] F. J. García-Peñalvo, J. Cruz-Benito, D. Griffiths and 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.
- [167] 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.

- [168] 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.
- [169] F. J. García-Peñalvo and N. A. Kearney, "Networked youth research for empowerment in digital society. The WYRED project," in *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.
- [170] F. J. García-Peñalvo, "WYRED Project," *Education in the Knowledge Society*, vol. 18, no. 3, pp. 7-14, 2017. doi: 10.14201/eks2017183714.
- [171] F. J. García-Peñalvo and J. Durán-Escudero, "Interaction design principles in WYRED platform," in *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 and 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.
- [172] F. J. García-Peñalvo, A. García-Holgado, A. Vázquez-Ingelmo and A. M. Seoane-Pardo, "Usability test of WYRED Platform," in *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 and 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.
- [173] A. García-Holgado and F. J. García-Peñalvo, "WYRED Platform, the ecosystem for the young people," presented in HCI International 2018, Las Vegas, NV, USA, July 15-20, 2018, 2018. Available from: <https://youtu.be/TRDjN5boky8>. doi: 10.5281/zenodo.1322032.
- [174] A. Camacho Díaz and F. J. García-Peñalvo, "W-STEM Project overview at the International Leadership Summit," presented in W-STEM International Leadership Summit, Cartagena de Indias, Colombia, November 25th, 2019. Available from: <https://bit.ly/2XIN5pL>. doi: 10.5281/zenodo.3552377.
- [175] A. García-Holgado, A. Camacho Díaz and F. J. García-Peñalvo, "Engaging women into STEM in Latin America: W-STEM project," in *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 and 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.
- [176] 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.
- [177] F. J. García-Peñalvo, "Innovative Teaching Approaches to attract, engage, and maintain women in STEM: W-STEM project," presented in Coimbra Group Seminar. Innovation in Learning and Teaching in Science, Technology, Engineering and Mathematics (STEM) fields, Granada, Spain, 14 November

- 2019, 2019. Available from: <https://bit.ly/2NWGFyA>. doi: 10.5281/zenodo.3538939.
- [178] F. J. García-Peñalvo, A. Bello, Á. Domínguez and R. Romero Chacón, "W-STEM International Leadership Summit World Café Report," W-STEM Consortium, Brussels, Belgium, Technical Report, 2019. Available from: <https://bit.ly/2RMAHUy>. doi: 10.5281/zenodo.3575091.
- [179] A. García-Holgado, A. Camacho Díaz and F. J. García-Peñalvo, "La brecha de género en el sector STEM en América Latina: Una propuesta europea," in *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 and F. J. García-Peñalvo, Eds. pp. 704-709, Zaragoza, Spain: Servicio de Publicaciones Universidad de Zaragoza, 2019. doi: 10.26754/CINAIC.2019.0143.
- [180] M. Á. Conde *et al.*, "RoboSTEAM - A Challenge Based Learning Approach for integrating STEAM and develop Computational Thinking," in *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 and F. J. García-Peñalvo, Eds. pp. 24-30, New York, NY, USA: ACM, 2019. doi: 10.1145/3362789.3362893.
- [181] C. Fernández-Llamas and M. Á. Conde-González, "RoboSTEAM Project – A brief review," 2019. Available from: <https://zenodo.org/record/3531941>. doi: 10.5281/zenodo.3531941.
- [182] F. J. García-Peñalvo, "O3 RoboSTEAM Environment – First overview and discussions," presented in RoboSTEAM Erasmus+ project Kick-Off, Bragança, Portugal, February 15-16, 2019, 2019. Available from: <https://goo.gl/hro7tc>. doi: 10.5281/zenodo.2571497.
- [183] F. J. García-Peñalvo, "En clave de innovación educativa. Construyendo el nuevo ecosistema de aprendizaje," presented in I Congreso Internacional de Tendencias en Innovación Educativa, CITIE 2016, Arequipa, Perú, 15 de noviembre de 2016, 2016. Available from: <https://goo.gl/8HQovc>.
- [184] A. García-Holgado and F. J. García-Peñalvo, "A metamodel proposal for developing learning ecosystems," in *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 and 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.
- [185] A. García-Holgado and F. J. García-Peñalvo, "Preliminary validation of the metamodel for developing learning ecosystems," in *Fifth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'17) (Cádiz, Spain, October 18-20, 2017)* J. M. Doderó, M. S. Ibarra Sáiz and I. Ruiz Rube, Eds. ACM International Conference Proceeding Series (ICPS), New York, NY, USA: ACM, 2017. doi: 10.1145/3144826.3145439.
- [186] A. García-Holgado and F. J. García-Peñalvo, "Definición de ecosistemas de aprendizaje independientes de plataforma," in *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 and F. J. García-

- Peñalvo, Eds. pp. 668-673, Zaragoza, España: Servicio de Publicaciones Universidad de Zaragoza, 2017. doi: 10.26754/CINAIC.2017.000001_143.
- [187] A. García-Holgado and F. J. García-Peñalvo, "Gestión del conocimiento abierto mediante ecosistemas tecnológicos basados en soluciones Open Source," in *Ecosistemas del Conocimiento Abierto*, J. A. Merlo Vega, Ed. Aquilafuente, no. 228, pp. 147-160, Salamanca, España: Ediciones Universidad de Salamanca, 2018.
- [188] A. García-Holgado and F. J. García-Peñalvo, "Learning ecosystem metamodel quality assurance," in *Trends and Advances in Information Systems and Technologies*, vol. 1, Á. Rocha, H. Adeli, L. P. Reis and 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.
- [189] F. J. García-Peñalvo, "La evolución de los sistemas software educativos: Los ecosistemas tecnológicos de aprendizaje," presented in Programa de Doctorado en Ingeniería Informática de la Universidad Complutense de Madrid, Madrid, España, 28 de abril de 2017, 2017. Available from: <https://goo.gl/Ykwrvtv>. doi: 10.5281/zenodo.569347.
- [190] A. García-Holgado and 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.
- [191] A. García-Holgado, I. Tajés Reiris, N. A. Kearney, C. Martinus and F. J. García-Peñalvo, "An App to Support Yoga Teachers to Implement a Yoga-Based Approach to Promote Wellbeing Among Young People: Usability Study," in *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 and 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.
- [192] F. J. García-Peñalvo, "Proyecto TACCLE3 – Coding," in *XVIII Simposio Internacional de Informática Educativa, SIIE 2016*, F. J. García-Peñalvo and J. A. Mendes, Eds. no. 222, pp. 187-189, Salamanca, España: Ediciones Universidad de Salamanca, 2016.
- [193] F. J. García-Peñalvo, "Presentación del Proyecto TACCLE3 Coding," presented in Workshop EI<18. Educación en Informática sub 18, Salamanca, España, 2016. Available from: <https://goo.gl/VZc6mZ>. doi: 10.5281/zenodo.163216.
- [194] F. J. García-Peñalvo. (2016). *Presentation of the TACCLE3 Coding European Project*. Available from: <http://repositorio.grial.eu/handle/grial/654>.
- [195] F. J. García-Peñalvo, "A brief introduction to TACCLE 3 – Coding European Project," in *2016 International Symposium on Computers in Education (SIIE 16)*, F. J. García-Peñalvo and J. A. Mendes, Eds., USA: IEEE, 2016. doi: 10.1109/SIIE.2016.7751876.
- [196] F. J. García-Peñalvo *et al.*, "Evaluation of existing resources (study/analysis)," TACCLE3 Consortium, Belgium, 2016. doi: 10.5281/zenodo.163112.
- [197] F. J. García-Peñalvo, D. Reimann, M. Tuul, A. Rees and 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.
- [198] F. J. García-Peñalvo and J. Cruz-Benito, "Computational thinking in pre-university education," in *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.
- [199] F. J. García-Peñalvo, A. M. Rees, J. Hughes, I. Jormanainen, T. Toivonen and J. Vermeersch, "A survey of resources for introducing coding into schools," in *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.
- [200] F. J. García-Peñalvo and 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.
- [201] R. Therón, A. G. Losada, A. Benito and R. Santamaría, "Toward supporting decision-making under uncertainty in digital humanities with progressive visualization," in *Proceedings TEEM'18. Sixth International Conference on Technological Ecosystems for Enhancing Multiculturality (Salamanca, Spain, October 24th-26th, 2018)*, F. J. García-Peñalvo, Ed. pp. 826-832, New York, NY, USA: ACM, 2018. doi: 10.1145/3284179.3284323.
- [202] J. M. Toribio Guzmán, A. García-Holgado, F. Soto Pérez, F. J. García-Peñalvo and M. A. Franco Martín, "Estudio de Usabilidad de la Red Social Privada SocialNet mediante Evaluación Heurística," in *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 and 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 and M. A. Franco Martín, "Study of the Usability of the Private Social Network SocialNet using Heuristic Evaluation," in *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 and 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 and M. A. Franco Martín, "Heuristic evaluation of SocialNet, the private social network for psychiatric patients and their relatives," in *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 and F. J. García-Peñalvo, "Trends in European research projects focused on technological ecosystems in the health sector," in *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 and F. J. García-Peñalvo, "Decision support tools for SLR search string construction," in *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 and F. J. García-Peñalvo, "Information retrieval methodology for aiding scientific database search," *Soft Computing*, vol. In Press, 2020. doi: 10.1007/s00500-018-3568-0.
- [208] S. Marcos-Pablos and 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] A. García-Holgado, J. Cruz-Benito and F. J. García-Peñalvo, "Análisis comparativo de la gestión del conocimiento en la administración pública española," in *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 and F. J. García-Peñalvo, Eds. pp. 602-607, Madrid, Spain: Fundación General de la Universidad Politécnica de Madrid, 2015.
- [210] F. Michavila, M. Martín-González, J. M. Martínez, F. J. García-Peñalvo and J. Cruz-Benito, "Analyzing the employability and employment factors of graduate students in Spain: The OEEU Information System," in *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, G. R. Alves and M. C. Felgueiras, Eds. pp. 277-283, New York, USA: ACM, 2015. doi: 10.1145/2808580.2808622.
- [211] F. Michavila, J. M. Martínez, M. Martín-González, F. J. García-Peñalvo and 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.
- [212] F. Michavila, J. M. Martínez, M. Martín-González, F. J. García-Peñalvo and 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.
- [213] F. Michavila, J. M. Martínez, M. Martín-González, F. J. García-Peñalvo, J. Cruz-Benito and A. Vázquez-Ingelmo, *Barómetro de empleabilidad y empleo universitarios. Edición Máster 2017*. Madrid, España: Observatorio de Empleabilidad y Empleo Universitarios, 2018. Available from: <https://goo.gl/qK3kqo>.
- [214] J. Cruz-Benito, J. C. Sánchez-Prieto, A. Vázquez-Ingelmo, R. Therón, F. J. García-Peñalvo and M. Martín-González, "How different versions of layout and complexity of web forms affect users after they start it? A pilot experience," in *Trends and Advances in Information Systems and Technologies*, vol. 2, Á. Rocha, H. Adeli, L. P. Reis and 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.
- [215] A. Vázquez-Ingelmo, J. Cruz-Benito and F. J. García-Peñalvo, "Improving the OEEU's data-driven technological ecosystem's interoperability with GraphQL," in *Fifth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'17) (Cádiz, Spain, October 18-20, 2017)* J. M. Dodero, M. S. Ibarra Sáiz and I. Ruiz Rube, Eds. ACM International Conference Proceedings Series (ICPS), New York, NY, USA: ACM, 2017. doi: 10.1145/3144826.3145437.

- [216] A. Vázquez-Ingelmo, J. Cruz-Benito, F. J. García-Peñalvo and M. Martín-González, "Scaffolding the OEEU's Data-Driven Ecosystem to Analyze the Employability of Spanish Graduates," in *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.
- [217] F. J. García-Peñalvo, "Modelo de referencia para la enseñanza no presencial en universidades presenciales," *Campus Virtuales*, vol. 9, no. 1, 2020.
- [218] F. J. García-Peñalvo, "Cómo entender el concepto de presencialidad en los procesos educativos en el siglo XXI," *Education in the Knowledge Society (EKS)*, vol. 16, no. 2, pp. 6-12, 2015. doi: 10.14201/eks2015162612.
- [219] B. Gros and F. J. García-Peñalvo, "Future trends in the design strategies and technological affordances of e-learning," in *Learning, Design, and Technology. An International Compendium of Theory, Research, Practice, and Policy*, M. Spector, B. B. Lockee and M. D. Childress, Eds. pp. 1-23, Switzerland: Springer International Publishing, 2016. doi: 10.1007/978-3-319-17727-4_67-1.
- [220] F. Llorens-Largo, "Campus virtuales: De gestores de contenidos a gestores de metodologías," *RED, Revista de Educación a Distancia*, vol. 42, pp. 1-12, 2014.
- [221] F. J. García-Peñalvo, Á. Fidalgo-Blanco and 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.
- [222] F. J. García-Peñalvo, Á. Fidalgo-Blanco and 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.
- [223] S. Houlden and G. Veletsianos, "A posthumanist critique of flexible online learning and its "anytime anyplace" claims," *British Journal of Educational Technology*, vol. 50, no. 3, pp. 1005-1018, 2019. doi: 10.1111/bjet.12779.
- [224] F. J. García-Peñalvo, "Modelo de Docencia Virtual para una Universidad Presencial," presented in IX Jornadas Internacionales de Campus Virtuales, Popayán, Colombia, 11-13 septiembre 2019, 2019. Available from: <https://bit.ly/2m9p1NW>. doi: 10.5281/zenodo.3406263.
- [225] F. J. García-Peñalvo, L. Moreno López and M. C. Sánchez-Gómez, "Empirical evaluation of educational interactive systems," *Quality & Quantity*, vol. 52, no. 6, pp. 2427-2434, 2018. doi: 10.1007/s11135-018-0808-4.
- [226] N. V. Ivankova, J. W. Creswell and S. L. Stick, "Using mixed-methods sequential explanatory design: From theory to practice," *Field methods*, vol. 18, no. 1, pp. 3-20, 2006. doi: 10.1177/1525822X05282260.
- [227] CRUE TIC, *UNIVERSITIC 2014: Descripción, Gestión y Gobierno de las TI en el Sistema Universitario Español*. Madrid, España: Conferencia de Rectores de las Universidades Españolas (CRUE), 2014.
- [228] J. Gómez, *UNIVERSITIC 2016. Análisis de las TIC en las Universidades Españolas*, Madrid: Crue Universidades Españolas, 2016. [Online]. Available from: <https://goo.gl/ctJLJC>.
- [229] J. Gómez Ortega Ed. "UNIVERSITIC 2017. Análisis de las TIC en las Universidades Españolas." Madrid, España: Crue Universidades Españolas, 2018. Available from: <https://goo.gl/zDz5fx>.
- [230] F. Huang, T. Teo, J. C. Sánchez-Prieto, F. J. García-Peñalvo and S. Olmos-Migueláñez, "Cultural values and technology adoption: A model comparison with university teachers from China and Spain," *Computers & Education*, vol. 133, pp. 69-81, 2019. doi: 10.1016/j.compedu.2019.01.012.

- [231] F. D. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319-340, 1989.
- [232] F. D. Davis, R. P. Bagozzi and P. R. Warshaw, "User acceptance of computer technology: A comparison of two theoretical models," *Management Science*, vol. 35, no. 8, pp. 982-1003, 1989. doi: 10.1287/mnsc.35.8.982.
- [233] F. D. Davis, R. P. Bagozzi and P. R. Warshaw, "Extrinsic and intrinsic motivation to use computers in the Workplace," *Journal of Applied Social Psychology*, vol. 22, no. 14, pp. 1111-1132, 1992. doi: 10.1111/j.1559-1816.1992.tb00945.x.
- [234] F. J. García-Peñalvo, M. J. Rodríguez-Conde, F. Martínez-Abad and A. García-Holgado, "Cuestionario de Indicadores sobre la Penetración y Uso de las Tecnologías Educativas en las Universidades Públicas Marroquíes," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-003, 2019. Available from: <https://goo.gl/XqosdK>. doi: 10.5281/zenodo.2582068.
- [235] F. J. García-Peñalvo, M. J. Rodríguez-Conde, F. Martínez-Abad and A. García-Holgado, "Questionnaire on Indicators of Incorporation and Use of Educational Technologies in Moroccan Public Universities," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-004, 2019. Available from: <https://goo.gl/NcUc9z>. doi: 10.5281/zenodo.2582074.
- [236] F. J. García-Peñalvo, M. J. Rodríguez-Conde, F. Martínez-Abad and A. García-Holgado, "Questionnaire d'Indicateurs sur la Pénétration et l'Usage des Technologies Éducatives dans les Universités Publiques Marocaines," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-005, 2019. Available from: <https://goo.gl/sN1EWV>. doi: 10.5281/zenodo.2582076.
- [237] F. Martínez-Abad, A. García-Holgado, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Cuestionario de Aceptación de las Tecnologías Educativas para la Docencia en las Universidades Públicas Marroquíes," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-006, 2019. Available from: <https://goo.gl/yvpVNO>. doi: 10.5281/zenodo.2582078.
- [238] F. Martínez-Abad, A. García-Holgado, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Questionnaire to measure Educational Technologies Acceptance in Moroccan Public Universities," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-007, 2019. Available from: <https://goo.gl/Gc7gdy>. doi: 10.5281/zenodo.2582080.
- [239] F. Martínez-Abad, A. García-Holgado, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Questionnaire d'Acceptation des Technologies Éducatives par le corps Professoral des Universités Publiques Marocaines," Grupo GRIAL, Universidad de Salamanca, Salamanca, España, Technical Report, GRIAL-TR-2019-008, 2019. Available from: <https://goo.gl/uFb6JU>. doi: 10.5281/zenodo.2582082.
- [240] A. Gamazo, J. C. Sánchez-Prieto, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Besoins d'intégration des technologies éducatives dans les Universités Publiques du Maroc," Contrat de jumelage MA13/ENPI/SO/02-17 (MA/58), Rabat, Royaume du Maroc, Technical Report, 2020.
- [241] J. C. Sánchez-Prieto, A. García-Holgado, F. J. García-Peñalvo and M. J. Rodríguez-Conde, "Situation des technologies éducatives dans L'enseignement

Universitaire public Marocain," Contrat de jumelage MA13/ENPI/SO/02-17
(MA/58), Rabat, Royaume du Maroc, Technical Report, 2019.