

TEEM 2016 Preface

Francisco J. García-Peñalvo
GRIAL Research Group,
Research Institute for Educational Science
University of Salamanca
fgarcia@usal.es

Welcome to The Fourth International Conference on Technological Ecosystem for Enhancing Multiculturality, TEEM 2016

Three years ago we started an amazing challenge in the Research Institute for Educational Sciences at the University of Salamanca (<http://iuce.usal.es>) with the TEEM first edition [8; 25]. It meant a new way to organize an academic conference, by the way we wanted to maximize the creation of a research community around the Knowledge Society topic from an interdisciplinary perspective [17] and in which one the PhD students might have a good opportunity to make networking with other peers and to be in contact with consolidate researchers all around the world [7; 15; 16].

The first edition was very successful, with 83 full papers accepted and published in the ACM proceedings, which are yet indexed in WoS and Scopus, and several special issues published in international and well-ranked journals [4-6; 9-13; 23; 31; 35].

The Second TEEM edition, TEEM 2014 [14], was held in Salamanca, Spain again. It meant the consolidation of the idea behind the conference. We grew in the number of submissions, 153, and we finally published 102 papers in the conference proceedings. Several special issues in international journals [22; 28; 33; 34; 36] were published too.

The Third TEEM edition in 2015 [2] was held in Porto, Portugal, being the first edition that was organized out of the University of Salamanca, starting the series of one year out of the Salamanca scope one year in Salamanca. It was very significant for the maturity of the conference. 90 full papers were accepted to be published in the proceedings and several special issues have been organized [1; 27; 29; 37].

The TEEM 2016 (<https://2016.teemconference.eu/>) returns to the University of Salamanca and it has received and amazing respond of the researching community. We have received 235 submissions, of which 165 have been accepted as full papers that are available in these proceedings, it means a 30% rejection ratio. All of the submitted papers were, at least, double blind reviewed. These papers have been organized in 16 thematic tracks:

- Track 1. Computational thinking in pre-university education.
- Track 2. Engineering and technological learning in educational and professional contexts.
- Track 3. Evaluation in education and guidance.
- Track 4. New publishing and scientific communication ways: Electronic edition, digital educational resources.
- Track 5. Learning analytics: Needs and opportunities.
- Track 6. LifeLong Education.
- Track 7. On Technological Change: Challenges and Opportunities for improving Lives, Society and Sustainable Development.
- Track 8. Latest Technology Trends in Health Sciences Education.
- Track 9. A world of digital competences: mobile apps, e-citizenship and computational systems as learning tools.
- Track 10. Teacher Education research and ICT.
- Track 11. Gamification ecosystems.
- Track 12. Educational innovation.
- Track 13. New trends in Digital humanities.
- Track 14. 7th International Workshop on Software Engineering for E-learning (ISELEAR'16).
- Track 15. Communication, Education and Health Promotion.
- Track 16. Doctoral Consortium.

With regard to the TEEM 2016 conference participants, 384 authors and co-authors distributed by 27 countries are presented in the proceedings. Besides, the International Program Committee has been incremented up to 189 members distributed by 26 countries.

In addition, this year the conference also serves as host for several activities apart of the parallel sessions to present the papers submitted to the conference. First of all, TEEM this year supports activities and dissemination events carried out by SNOLA (Spanish Network of Learning Analytics) [3]. This thematic research network, funded and supported by the Spanish Ministry of Economy and Competitiveness TIN2015-71669-REDT, organizes two workshops during the conference to gather experiences in developing research networks in both Spain and international contexts. These experiences are going to be shared by six recognized international speakers invited by the conference and the different attendees to the conference that have participated in research networks and research associations in previous years and funding calls.

Also, TEEM Conference hosts the workshop "Designing collaborations: could design probes contribute to better communication between collaborators?" [32] where researchers from different countries and research areas try to collaborate and discuss about Digital Humanities. This workshop is carried out in conjunction to COST ENeL (<http://www.elexicography.eu/>) research network and the ExploreAT European research project (<http://exploreat.usal.es/>).

In the opening session of the conference the H2020 WYRED project (netWorked Youth Research for Empowerment in the Digital society) will be presented in a keynote conference [26] by Dr. Nicholas A. Kearney.

In the track about Computational thinking in pre-university education [24] the TACCLE 3 – Coding [18; 20; 21; 38] European Project will be represented by several papers.

I would like to thank the members of the Steering Committee for their counsel, the International Program Committee for their accurate and timely reviewing. I would also like to thank the Track Chairs for their efforts in organizing the academic issues related to each track, and the Organizing Committee for their huge effort in all the associated tasks that an international conference involves. I would like to do a special mention for the Editors-in-Chief of the linked journals that have offered special issues or slots in their regular issues for those selected and extended papers of TEEM 2016 conference that will have another in-depth review following the guidelines of each journal. Last, but not least, I would like to thank the participating organizations: University of Salamanca, Research Institute for Educational Sciences at the University of Salamanca, GRIAL Research Group [19; 30], European Commission, The regional government of Junta de Castilla y León, and ACM for their support.

Next year, we will continue with Fifth Edition of TEEM Conference that will be held at the University of Cádiz, Spain next 18-20 October 2017.

Salamanca, Spain, 31st October, 2016

Francisco José García-Peñalvo (TEEM 2016 Conference Chair)

References

- [1] Alier Forment, M., Caetano, N., García-Peñalvo, F.J., Amante, B., and Martínez, R., 2015. A focus on teaching and learning sustainability and social commitment skills. *Journal of Technology and Science Education* 5, 4, 229-234. DOI= <http://dx.doi.org/http://dx.doi.org/10.3926/jotse.214>.
- [2] Alves, G.R. and Felgueiras, M.C., 2015. Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015) ACM, New York, USA.
- [3] Caeiro-Rodríguez, M., Conde, M.Á., Guenaga, M., Hernández-García, Á., Larrañaga, M., Martínez-Monés, A., Muñoz-Merino, P.J., Pastor-Vargas, R., Perallos-Ruiz, A., and Rodríguez-Conde, M.-J., 2016. SNOLA: Spanish Network of Learning Analytics. 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, New York, NY, USA.
- [4] Conde-González, M.Á. and Hernández-García, Á., 2015. Learning analytics for educational decision making. *Computers in Human Behavior* 47, 1-3. DOI= <http://dx.doi.org/10.1016/j.chb.2014.12.034>.

- [5] Cordón-García, J.A. and Gómez-Díaz, R., 2014. The Changes in the Way to Create, View and Preserve Digital Information. *Information Resources Management Journal* 27, 3, iv-v.
- [6] Curto, B. and Moreno, V., 2016. Robotics in Education. *Journal of Intelligent and Robotic Systems* 81, 1, 3-4. DOI= <http://dx.doi.org/10.1007/s10846-015-0314-z>.
- [7] García-Peñalvo, F.J., 2013. Education in knowledge society: A new PhD programme approach. 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, New York, NY, USA, 575-577. DOI= <http://dx.doi.org/http://dx.doi.org/10.1145/2536536.2536624>.
- [8] García-Peñalvo, F.J., 2013. Proceedings of the First International Conference on Technological Ecosystems for Enhancing Multiculturality, TEEM 2013. In *First International Conference on Technological Ecosystems for Enhancing Multiculturality* ACM, New York, USA, 582.
- [9] García-Peñalvo, F.J., 2014. Educational Innovation Successful Cases – Part 2. *Journal of Cases on Information Technology* 16, 4, iv-vii.
- [10] García-Peñalvo, F.J., 2014. Educational Innovation Successful Cases – Part I. *Journal of Cases on Information Technology* 16, 3, 1-3. DOI= <http://dx.doi.org/10.4018/jcit.2014070101>.
- [11] García-Peñalvo, F.J., 2014. Formación en la sociedad del conocimiento, un programa de doctorado con una perspectiva interdisciplinar. *Revista Teoría de la Educación: Educación y Cultura en la Sociedad de la Información* 15, 1, 4-9.
- [12] García-Peñalvo, F.J., 2014. Informal Learning Management Experiences. *International Journal of Human Capital and Information Technology Professionals (IJHCITP)* 5, 3, iv-ix.
- [13] García-Peñalvo, F.J., 2014. Managing the Knowledge Society Construction. *International Journal of Knowledge Management* 10, 4, iv-vii.
- [14] García-Peñalvo, F.J., 2014. Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality, TEEM 2014 ACM, New York, USA.
- [15] García-Peñalvo, F.J., 2014. Technological Ecosystems for Enhancing Multiculturality Doctoral Consortium. In *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'14)*, F.J. García-Peñalvo Ed. ACM, New York, USA, 627-631. DOI= <http://dx.doi.org/http://dx.doi.org/10.1145/2669711.2669965>.
- [16] García-Peñalvo, F.J., 2015. Doctoral Consortium. 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, New York, USA, 619-621. DOI= <http://dx.doi.org/http://dx.doi.org/10.1145/2808580.2808675>.
- [17] García-Peñalvo, F.J., 2015. Engineering contributions to a Knowledge Society multicultural perspective. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje (IEEE RITA)* 10, 1, 17-18. DOI= <http://dx.doi.org/10.1109/RITA.2015.2391371>.
- [18] García-Peñalvo, F.J., 2016. A brief introduction to TACCLE 3 – Coding European Project. In *2016 International Symposium on Computers in Education (SIIE)*, F.J. García-Peñalvo and J.A. Mendes Eds. IEEE, USA.
- [19] García-Peñalvo, F.J., 2016. Presentation of the GRIAL research group and its main research lines and projects on March 2016. GRIAL Research Group, <http://hdl.handle.net/10366/127737>.
- [20] García-Peñalvo, F.J., 2016. Presentation of the TACCLE3 Coding European Project. <http://repositorio.grial.eu/handle/grial/654>.
- [21] García-Peñalvo, F.J., 2016. Proyecto TACCLE3 – Coding. In *XVIII Simposio Internacional de Informática Educativa, SIIE 2016*, F.J. García-Peñalvo and J.A. Mendes Eds. Ediciones Universidad de Salamanca, Salamanca, España, 187-189.
- [22] García-Peñalvo, F.J., 2016. Technological Ecosystems. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje* 11, 1, 31-32. DOI= <http://dx.doi.org/10.1109/RITA.2016.2518458>.
- [23] García-Peñalvo, F.J. and Colomo-Palacios, R., 2015. Innovative teaching methods in Engineering. *International Journal of Engineering Education (IJEE)* 31, 3, 689-693.
- [24] García-Peñalvo, F.J. and Cruz-Benito, J., 2016. 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. ACM, New York, NY, USA.
- [25] García-Peñalvo, F.J., García-Holgado, A., and Cruz-Benito, J., 2013. Proceedings of the TEEM'13 Track on Knowledge Society Related Projects Grupo GRIAL, Salamanca, Spain.
- [26] García-Peñalvo, F.J. and Kearney, N.A., 2016. 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, New York, NY, USA.
- [27] García-Peñalvo, F.J. and Llamas Nistal, M., 2017. Engineering behind technology-based educational innovations. *International Journal of Engineering Education In Press*.
- [28] García-Peñalvo, F.J. and Ramírez Montoya, M.S., 2015. Educational Innovation with a Multicultural Perspective. *Journal of Cases on Information Technology* 17, 1, iv-vi.
- [29] García-Peñalvo, F.J. and Ramírez Montoya, M.S., 2016. Technology cases for improving the university Third Mission. *Journal of Cases on Information Technology* 18.

- [30] García-Peñalvo, F.J., Rodríguez-Conde, M.J., Seoane-Pardo, A.M., Conde-González, M.Á., Zangrando, V., and García-Holgado, A., 2012. GRIAL (GRupo de investigación en InterAcción y eLearning), USAL. *IE Comunicaciones. Revista Iberoamericana de Informática Educativa*, 15, 85-94.
- [31] García-Peñalvo, F.J., Sarasa Cabezuelo, A., and Sierra González, J.L., 2014. Innovating in the Engineering Processes: Engineering as a Means of Innovation. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje (IEEE RITA)* 9, 4, 131-132. DOI= <http://dx.doi.org/10.1109/RITA.2014.2363004>.
- [32] Goikhman, A., Therón, R., and Wandl-Vogt, E., 2016. Designing Collaborations: Could design probes contribute to better communication between collaborators? 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, New York, NY, USA.
- [33] Griffiths, D. and García-Peñalvo, F.J., 2016. Informal learning recognition and management. *Computers in Human Behavior* 55A, 501-503. DOI= <http://dx.doi.org/10.1016/j.chb.2015.10.019>.
- [34] Juanes, J.A. and Ruisoto, P., 2015. Computer Applications in Health Science Education. *Journal of Medical Systems* 39, 9, 97. DOI= <http://dx.doi.org/10.1007/s10916-015-0283-6>.
- [35] Juanes Méndez, J.A. and Ruisoto, P., 2014. Technological Advances and Teaching Innovation Applied to Health Science Education. *Journal of Information Technology Research* 7, 2, 1-6. DOI= <http://dx.doi.org/10.4018/jitr.2014040101>.
- [36] Minović, M., García-Peñalvo, F.J., and Kearney, N.A., 2016. Gamification in Engineering Education. *International Journal of Engineering Education (IJEE)* 32, 1B, 308-309.
- [37] Sein-Echaluce, M.L., Fidalgo-Blanco, Á., and Alves, G., 2017. Technology Behaviors in Education Innovation. *Computers in Human Behavior In Press*.
- [38] Tackle 3 Consortium, 2016. TACCLE 3: Coding Erasmus + Project website. <http://www.tackle3.eu/>.