

Presentation of the paper “Adaptive and cooperative model of knowledge management in MOOCs” in HCII 2017

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Abstract

This is the presentation of the paper entitled “Adaptive and cooperative model of knowledge management in MOOCs” in the Emerging interactive systems for education session at the HCI International 2017 Conference, held in Vancouver, Canada, 9 - 14 July 2017.

One of the characteristics of Massive Open Online Courses (MOOC) is the heterogeneity of their participants' profiles and, for the most traditional MOOC model, this is an important cause of the low completion rate. The MOOC model presents two apparent antagonistic concepts, globalization and diversity. MOOCs represent globalization (participants have to be adapted to the course) and their participants represent diversity. The authors of this paper argue that both concepts complement each other; that is, a MOOC can adapt the contents and navigation to the diversity of participants; and in turn the participants themselves can increase and improve the contents of the MOOC, through heterogeneous cooperation, to encourage massive learning. To proof it, this paper presents a new model, called ahMOOC, combining the hybrid-MOOC (hMOOC) and the adaptive MOOC (aMOOC). The hMOOC allows integrating characteristics of xMOOCs (based on formal e-training) with cMOOCs (based on informal and cooperative e-training). The aMOOC offers different learning strategies adapted to different learning objectives, profiles, learning styles, etc. of participants. The ahMOOCs continues having a lower dropout rate (such as hMOOC) than the traditional MOOCs. The qualitative analysis show the capacity of participants, with heterogeneous profiles, to create, in a cooperative and massive way, useful knowledge to improve the course and, later, to apply it in their specific work context. The study also shows that participants have a good perception on the capabilities of the ahMOOC to adapt the learning process to their profiles and preferences.

Keywords

Adaptive learning, Massive open online course, Online learning, Learning management system

Link to the presentation

<http://goo.gl/wX2CXL>

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References

- Adams Becker, S., Cummins, M., Davis, A., Freeman, A., Hall Giesinger, C., Ananthana-ayan, V.: NMC Horizon Report: 2017 Higher Education Edition. The New Media Consortium, Austin, Texas (2017)
- Berlanga, A.J., García-Peñalvo, F.J.: IMS LD reusable elements for adaptive learning designs. *Journal of Interactive Media in Education* 11, (2005)
- Berlanga, A.J., García-Peñalvo, F.J.: Learning Design in Adaptive Educational Hypermedia Systems. *Journal of Universal Computer Science* 14, 3627-3647 (2008)
- Downes, S. Stephen's Web. (2016) [Online]. Available: <http://www.downes.ca/post/65696>. [Accessed: 20-Febr-2017].

- Fidalgo-Blanco, Á., Sein-Echaluce Lacleta, M.L., García-Peñalvo, F.J.: Methodological Approach and Technological Framework to break the current limitations of MOOC model. *Journal of Universal Computer Science* 21, 712-734 (2015)
- Fidalgo-Blanco, Á., Sein-Echaluce, M.L., García-Peñalvo, F.J.: 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)* 13, 24 (2016)
- FT. Video presentation. (2016). Retrieved on 02/18/2016. <https://www.youtube.com/watch?v=h3W1nOD3FRo&feature=youtu.be>
- García-Peñalvo, F. J. (2015). Mapa de tendencias en Innovación Educativa. *Education in the Knowledge Society (EKS)*, 16(4), 6-23. doi:10.14201/eks2015164623
- García-Peñalvo, F. J. (2016). Are Universities Aware of the Changes that are Occurring in Higher Education? *Education in the Knowledge Society*, 17(4), 7-13. doi:10.14201/eks2016174713
- García-Peñalvo, F. J. (2016). The Third Mission. *Education in the Knowledge Society*, 17(1), 7-18. doi:<http://dx.doi.org/10.14201/eks2016171718>
- García-Peñalvo, F.J., Fidalgo-Blanco, Á., Sein-Echaluce Lacleta, M., Conde-González, M.Á.: Cooperative Micro Flip Teaching. In: Zaphiris, P., Ioannou, I. (eds.) *Learning and Collaboration Technologies. Third International Conference, LCT 2016, Held as Part of HCI International 2016, Toronto, ON, Canada, July 17-22, 2016, Proceedings*, pp. 14-24. Springer International Publishing, Switzerland (2016)
- García-Peñalvo, F.J., Griffiths, D.: Rethinking informal learning. In: Alves, G.R., Felgueiras, M.C. (eds.) *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, pp. 457-459. ACM, New York, USA (2015)
- García-Peñalvo, F.J., Hernández-García, Á., Conde-González, M.Á., Fidalgo-Blanco, Á., Sein-Echaluce Lacleta, M.L., Alier-Forment, M., Llorens-Largo, F., Iglesias-Pradas, S.: Learning services-based technological ecosystems. In: Alves, G.R., Felgueiras, M.C. (eds.) *Proceedings of the Third International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'15) (Porto, Portugal, October 7-9, 2015)*, pp. 467-472. ACM, New York, USA (2015)
- García-Peñalvo, F.J., Hernández-García, Á., Conde, M.Á., Fidalgo-Blanco, Á., Sein-Echaluce, M.L., Alier-Forment, M., Llorens-Largo, F., Iglesias-Pradas, S.: Enhancing Education for the Knowledge Society Era with Learning Ecosystems. In: García-Peñalvo, F.J., García-Holgado, A. (eds.) *Open Source Solutions for Knowledge Management and Technological Ecosystems*, pp. 1-24. IGI Global, Hershey PA, USA (2017)
- Griffiths, D., García-Peñalvo, F.J.: Informal learning recognition and management. *Computers in Human Behavior* 55A, 501-503 (2016)
- LC. Video presentation. (2016) Retrieved on 02/18/2016. <https://innovacioneducativa.wordpress.com/2015/11/10/como-utilizar-una-red-social-para-construir-una-comunidad-de-aprendizaje/>
- Lerís, D., Sein-Echaluce, M.L., Hernández, M., Bueno, C.: Validation of indicators for implementing an adaptive platform for MOOCs. *Computers in Human Behavior*. In press (2016) <http://dx.doi.org/10.1016/j.chb.2016.07.054>
- Leris, D., Sein-Echaluce, M.L., Hernández, M., Fidalgo-Blanco, A. Relation between adaptive learning actions and profiles of MOOCs users. *Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) Salamanca 2-4 Noviembre 2016*. ACM, New York, NY, USA. pp. 857-863. (2016)
- Moodle. Moodle web (2017) [Online]. Available: <http://moodle.org>. [Accessed: 20-Febr-2017].
- Nonaka, I., Takeuchi, H.: *The knowledge creating company*. Oxford University Press, New York, NY (1995)
- PFEI. Video presentation. (2016). Retrieved on 02/18/2016. <https://prezi.com/glu0pwhpnb3/fundamentos-practicos-de-la-innovacion-educativa/>
- Sein-Echaluce Lacleta, M.L., Fidalgo-Blanco, Á., García-Peñalvo, F.J., Conde-González, M.Á.: iMOOC Platform: Adaptive MOOCs. In: Zaphiris, P., Ioannou, I. (eds.) *Learning and Collaboration Technologies. Third International Conference, LCT 2016, Held as Part of HCI International 2016, Toronto, ON, Canada, July 17-22, 2016, Proceedings*, pp. 380-390. Springer International Publishing, Switzerland (2016)
- Sein-Echaluce, M. L., Fidalgo-Blanco, Á., & García-Peñalvo, F. J. (2017). Adaptive and cooperative model of knowledge management in MOOCs. In P. Zaphiris & A. Ioannou (Eds.), *Learning and Collaboration Technologies. Technology in Education. 4th International onference, LCT 2017. Held*

as Part of HCI International 2017, Vancouver, BC, Canada, July 9–14, 2017. Proceedings, Part I (pp. 273-284). Switzerland: Springer International Publishing.

TWCD. Video presentation. (2016). Retrieved on 02/18/2016.
<https://innovacioneducativa.wordpress.com/2015/11/03/como-formar-y-evaluar-en-la-competencia-de-trabajo-en-equipo-de-forma-sencilla-el-metodo-ctmtc/>