

Learningshift – supporting the future of learning.

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Abstract

A robust line of research has pointed, for the last years, towards new learning and facilitation profiles, based on the principles of personalisation, collaboration, ownership, meaning and connection to the real world. Yet the findings from research still lack application in practice and the need to introduce practical operational strategies is urgent.

The Learningshift project is a European initiative, co-funded by the Erasmus + Programme, and counts with the participation of European higher education institutes (Aalborg University, Tampere University of Applied Sciences, Kaunas University of Technology), training centers (CICCOPN) and enterprises dedicated to the educative field (Advancis, Autens).

The project consortium is dedicated to support facilitators and learners following the innovation in education, as it is a first step towards more innovative employees and entrepreneurs. Thus, the Learningshift project will provide the context, the process and the tools for educators to be able to act as facilitators of the 21st (and beyond) learning communities.

The research phase allowed the project consortium to identify the innovative learning trends from the participating countries and to provide a compass for developing innovative learning competencies in the 21st century. The compass is now guiding the consortium in the development of new learning resources for each one of the themes and to inspire educators towards the 21st century competencies.

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Bibliography

Askhave, I., Prehn, H. L., Pedersen, J. & Pedersen, M. T. (2015). PBL. Problem-Based Learning. Aalborg: Aalborg Universitet.

Blackmore, J., Bateman, D., Cloonan, A., Dixon, M., Loughlin, J., O'Mara, J. & Senio, K. (2011b). Innovative Learning Environment Research Study. Retrieved from https://www.deakin.edu.au/__data/assets/pdf_file/0003/365196/innovative-learning-spaces-final-report.pdf

Blackmore, J., Bateman, D., Loughlin, J., O'Mara, J. & Aranda, G. (2011a). Research into the connection between built learning spaces and student outcomes. East Melbourne, Vic: Department of Education and Early Childhood Development.

Bocconi, S., Kampylis, P. G. & Punie, Y. (2012). Innovating Learning: Key Elements for Developing Creative Classrooms in Europe. doi:10.2791/90566

Cachia, R., Ferrari, A., Ala-Mutka, K. & Punie, Y. (2010). Creative Learning and Innovative Teaching. Final Report on the Study on Creativity and Innovation in Education in the EU Member States. Luxembourg: Publications Office of the European Union. doi:10.2791/52913

Carter, D. & Crichton, S. (2014). Empowering twenty-first century assessment practices: designing technologies as agents of change, *Educational Media International* (51:4), 295-309. doi:10.1080/09523987.2014.977007

De Graaff E. & Guerra A. (2015) Problem Based Learning: The Aalborg Example: The visitor's workshop at AAU Active Learning in Engineering Education Workshop - Mondragon, Spanien.

De Graaff, E. & Kolmos, A. (2003). Characteristics of Problem-Based Learning. *International Journal of Engineering Education* 19 (5). 657-662. Retrieved from https://www.researchgate.net/publication/265092235_Characteristics_of_Problem-Based_Learning

Dilley, A., Fishlock, J. & Plucker, J. A. (2017). What We Know About Communication. Retrieved from <http://www.p21.org/our-work/4cs-research-series/communication>

Durvasi, P. (2016). Empathy, Perspective and Complicity: How Digital Games Can Support Peace Education and Conflict Resolution. MGIEP working paper, 3, 24.

Retrieved from http://unesdoc.unesco.org/Ulis/cgi-bin/ulis.pl?catno=259928&set=005AED7D77_0_61&gp=0&lin=1&ll=1

Education 2020. (2014). Retrieved May 2, 2018, from <http://government-2020.dupress.com/category/education/>

Farber, M. & Schrier, K. (2017). The Limits and Strengths of Using Digital Games as “Empathy Machines”. MGIEP working paper, 5, 38. Retrieved from https://d27gr4uvqxfbqz.cloudfront.net/files%2Fd61c7672-81d3-4ae0-8cc0-b14f53d1ab01_Working%20Paper%205.pdf

Ferguson, R., Barzilai, S., Ben-Zvi, D., Chinn, C. A., Herodotou, C., Hod, Y., ... Whitelock, D. (2017). *Innovating Pedagogy 2017: Open University Innovation Report 6*. Milton Keynes: The Open University, UK.

Fisk, P. (2017). Education 4.0 ... the Future of Learning Will Be Dramatically Different, in School and Throughout Life. Retrieved from <https://www.thegeniusworks.com/2017/01/future-education-young-everyone-taught-together/>

Freeman, A., Adams Becker, S., Cummins, M., Davis, A., & Hall Giesinger, C. (2017). *NMC/CoSN Horizon Report: 2017 K–12 Edition*. Austin, Texas: The New Media Consortium.

Gen Z in the Classroom: Creating the Future. (2016). Retrieved April 28, 2018, from <http://www.adobeeducate.com/genz/genzinclassroom>

Herro, D. & Quigley, C. (2016). *Innovating with STEAM in Middle School Classrooms: Remixing Educations*. *On the Horizon* 24 (3). 190-204. doi:10.1108/OTH-03-2016-0008

Higgins, S., Hall, E., Wall, K., Woolner, P. & McCaughey, C. (2005). The Impact of School Environments: A literature review. Retrieved from https://www.researchgate.net/publication/232607630_The_Impact_of_School_Environments_A_Literature_Review

Kadir, M. A. B. (2017). What Teacher Knowledge Matters in Effectively Developing Critical Thinkers in the 21 st Century Curriculum. *Thinking Skills and Creativity* 23, 79-90.

Kärkkäinen, K & Vincent-Lancrin, S. (2013). *Sparking Innovation in STEM Education with Technology and Collaboration: A Case Study of the HP Catalyst Initiative*. OECD

Education Working Papers, 91, 126. Retrieved from https://www.oecd-ilibrary.org/education/sparking-innovation-in-stem-education-with-technology-and-collaboration_5k480sj9k442-en

Kolmos, A. & de Graff, E. (2014). Problem-Based and Project-Based Learning in Engineering Education: Merging Models. In A. Johri & B. M. Olds (Eds.), *Cambridge Handbook of Engineering Education Research* (pp. 141-161). Cambridge: Cambridge University Press.

Laar, E., Deursen, A., Dijk, J. & Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, 72, 577-588.

Liu, E. Z. F. & Chen, P. (2013). The Effect of Game-Based Learning on Students' Learning Performance in Science Learning - A Case of "Conveyance Go". *Procedia - Social and Behavioral Sciences* 103. 1044-1051. doi:10.1016/j.sbspro.2013.10.430

Moore, T. (2013). Critical Thinking: Seven Definitions in Search of a Concept. *Studies in Higher Education*, 38 (4), 506-522. doi:10.1080/03075079.2011.586995

Mulnix, J. W. (2012). Thinking Critically about Critical Thinking. *Educational Philosophy and Theory*, 44 (5), 464-479. doi:10.1111/j.1469-5812-2010.00673.x

NMC/CoSN Horizon Report: 2017 K-12 Edition. (2017). Retrieved April 20, 2018, from <https://cdn.nmc.org/media/2017-nmc-cosn-horizon-report-k12-EN.pdf>

Oblinger, D. G. (2006). *Learning Spaces*. Retrieved from <https://digitalcommons.brockport.edu/cgi/viewcontent.cgi?referer=https://scholar.google.dk/&httpsredir=1&article=1077&context=bookshelf>

Ontario Ministry of Education. (2016). *21st Century Competencies. Foundation Document for Discussion* (winter 2016 ed.). Ontario.

Plucker, J. A., Kaufmann, J. C. & Beghetto, R. A. (2017). What We Know About Creativity. Retrieved from <http://www.p21.org/our-work/4cs-research-series/creativity>

Plucker, J. A., Kennedy, C. & Dilley, A. (2017). What We Know About Collaboration. Retrieved from <http://www.p21.org/our-work/4cs-research-series/collaboration>

Rogers, E. M. (2003). *Diffusion of innovations*. Free Press.

Sharples, M., McAndrew, P., Weller, M., Ferguson, R., FitzGerald, E., Hirst, T. & Gaved, M. (2013). *Innovating Pedagogy 2013: Open University Innovation Report*. Milton Keynes, The Open University, UK.

Voogt, J., Erstad, O., Dede, C. & Mishra, P. (2013). Challenges to Learning and Schooling in the Digital Networked World of the 21st Century. *Journal of Computer Assisted Learning* 29 (5). 403-413. doi:10.1111/jcal.12029

Vygotsky, L. S. (2004). Imagination and Creativity in Childhood. *Journal of Russian and East European Psychology* 42 (1). 7-97. doi:10.1080/10610405.2004.11059210

Winterman, B. & Malacinski, G. M. (2015). Teaching Evidence-Based Innovation (EBI) As a Transdisciplinary Professional Skill in an Undergraduate Biology Writing Workshop. *International Journal of Arts & Sciences* 8 (2). 423-439. Retrieved from https://s3.amazonaws.com/academia.edu.documents/38843547/out.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1534350028&Signature=TeoAhNjh7e%2F%2BZ8Z26fqnhQnpOPU%3D&response-content-disposition=inline%3B%20filename%3DTEACHING_EVIDENCE-BASED_INNOVATION_EBI_A.pdf

Wirkala, C. & Kuhn, D. (2011) Problem-Based Learning in K–12 Education: Is it Effective and How Does it Achieve its Effects?. *American Educational Research Journal - AMER EDUC RES J.* 48. 1157-1186. 10.3102/0002831211419491

Yakman, G. (2008). STEAM education: An overview of creating a model of integrative education. In *Pupils' Attitudes towards Technology (PATT-19) Conference: Research on Technology, Innovation, Design & Engineering Teaching*. Salt Lake City, Utah.

Zosh, J. M., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., Hirsh-Pasek, K., Solis, S. L. & Whitebread, D. (2017). *Learning through play: a review of the evidence*. Retrieved from <http://www.legofoundation.com/nl-nl/research-and-learning/foundation-research>