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Designer as an Innovation Trigger for the SME Manufacturing Sector
An European joint Master's degree program based on soft, digital, green, and design skills

ABSTRACT

The aim of this article was to describe the definition process of a joint master's degree program as a proposal for the training of professional smart designers on the skills needed to contribute to the current green and digital transition of the European industry context. Arising from the framework of the INTRIDE European project, this article has been structured starting from an introductory analysis of the demanded skills of designers and the needs of European Union (EU) companies in the current contemporary scenario. As such, the reflection extends to the research methodology established for the development of a state of the art on soft, digital, and green skills as a scientific basis for the definition of a cross and interdisciplinary training course entitled Strategic design for innovation in the manufacturing sector. Thus, focusing on the Bologna Declaration (June 19, 1999) in which the need to build a "European Higher Education Area" has been declared. Based on the achieved research results, the authors propose the INTRIDE Joint Master's Degree Program (JMDP) as a cross and interdisciplinary training course for smart designers that will become the future innovation triggers for small- and medium-sized enterprises (SMEs) in the EU manufacturing sector. This, together with added competencies related to soft, digital, and green skills – as general ones – and design and technological – as specific ones. At the end of this scientific contribution, a discussion has been reported regarding a general reflection on the developed design process and the lessons learned in the application of the design methodology, combined with the suggestions for a sustainable use and implementation of the proposed training program.

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References

Ainamo, A. (2007), Coordination mechanisms in cross-functional teams: a product design perspective, Journal of Marketing Management, 23(9-10): 841-860.

Barabasi, A-L. (2011), Bursts: The Hidden Patterns Behind Everything We Do, from Your E-mail to Bloody Crusades, Asheville USA: Plume editions.

Buchanan, R. (1992), Wicked Problems in Design Thinking, Design Issues, 8(2): 5-21.

Buchanan, R. (2001), Design research and new learning, Design Issues, 17(4): 3-23.

Carolan, N., Cruickshank, L. (2010), Understanding Design Intervention of Democratic Innovation, Swedish Design Research Journal, 2.

Cottam, H. (2020), Welfare 5.0: Why we need a social revolution and how to make it happen, London: UCL Institute for Innovation and Public Purpose (IIPP).

Digital Education Action Plan, available at: https://education.ec.europa.eu/document/digital-education-action-plan (accessed 23 March 2022).

Design Council (2021), Annual Report and Accounts.DeEP.eu, available at: http://www.deepinitiative.eu (accessed 23 March 2022).

Emilson, A. (2015), Design in the Space between Stories. Design for Social Innovation and Sustainability – from responding to societal challenges to preparing for societal collapse, Doctoral thesis, Malmo: Malm University.

European Commission (2019), INTRIDE/Erasmus+. Soft, Digital and Green Skills for Smart Designers: Designers as Innovative TRIggers for SMEs in the manufacturing sector, available at: https://erasmus-plus.ec.europa.eu/projects/ ep-plus-project-details#project/612622-EPP-1-2019-1-IT-EPPKA2-KA (accessed 22 March 2022).

European Green Deal, Strategy 2019-2024, available at: https://ec.europa.eu/info/strategy/ priorities-2019-2024/european-green-deal_it (accessed 23 March 2022).

Fulton Suri, J. (2003), The Experience of Evolution: Developments in Design Practice, The Design Journal, 6(2): 39-48.

Hasling, K. M. (2018), Perspectives on the role of materials in sustainable product design education, Temes de disseny, 34: 104-115.

Holmlid, S. (2009), Participative, co-operative, emancipatory: from participatory design to service design, Oslo: First Nordic Conference on Service Design and Service Innovation.

Industry 5.0. Towards a sustainable, human-centric and resilient European industry, European Commission Directorate-General for Research and Innovation, published in January 2021, available at: https://op.europa.eu/en/ publication-detail/-/publication/468a892a-5097-11eb-b59f-01aa75ed71a1/ (accessed 23 March 2022).

Jones, P., Kijima, K. (eds.) (2018), Systemic Design: Theory, Methods, and Practice, Springer Japan.

Kelley, T., Littman, J. (2001), The art of innovation: Lessons in creativity from IDEO, America's leading design firm, New York: Currency/Doubleday.

Kimbell, L. (2011), Designing for Service as One Way of Designing Services, International Journal of Design, 5(2): 41-52.

Kuys, B., Koch, C., Renda, G. (2022), The Priority Given to Sustainability by Industrial Designers within an Industry 4.0 Paradigm, Sustainability 14(76).

Maldonado, T. (1992), La speranza progettuale, Torino: Ambiente e società. Einaudi editore.

Manzini, E. (2016), Design Culture and Dialogic Design, Design Issues, 1 January 2016.

Manzini, E. (2015), Design, When Everybody Designs: An Introduction to Design for Social Innovation, Cambridge: The MIT press.

Meroni, A., Selloni, D., Rossi, M. (2018), Massive Codesign. A proposal for a Collaborative Design Framework, Milano: Franco Angeli open access.

Morin, E. (2008), On complexity, New York: Hampton press

O'Grady, J. (2012), Design Is Entrepreneurship Is Design Is...., The Design Management Institute, 2012: 82–88.

Papanek, V. (1995), The Green Imperative. Ecology and Ethics in Design and Architecture, London: Thames & Hudson.

Perez, C. (2002), Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages, London: Elgar.

Paper Series (WP 2016-1), available at: http://beyondthetechrevolution.com/wpcontent/uploads/2014/10/BTTR_WP_2016-1.pdf (accessed 23 March 2022).

Perks, H., Cooper, R., Jones, C. (2005), Characterizing the role of design in new product development: An empirically derived taxonomy, Journal of Product Innovation Management, 22(2): 111-127.

Ramírez, L. V., Medina, M. G. (2008), Educación basada en competencias y el proyecto Tuning en Europa y Latinoamérica. Su impacto en México, Revista Ide@ s CONCYTEG, 39.

Rampino, L. (2012), Design research: between scientific method and project praxis, Milano: Franco Angeli.

Rittel, H. W. J., Webber, M. M. (1973), Dilemmas in a General Theory of Planning, Policy Sciences, 4: 155-169.

Sucháček, J., Walancik, M., Wróblewski, Ł., Urminský, J., Drastichová, M., Šotkovský, I. (2018), Management of Municipal Development of Euroregion Beskydy in Poland and Czechia, Polish Journal of Management Studies, 18(1): 365-378.

Taverner Ribas, C., Trojan, L., Simion, O., Szkudlarek, E. (2021), Design culture in the era of Industry 5.0: a review of skills & needs, Cultural Management: Science and Education, 5(1): 41-58.

Thackara, J. (2005), In the Bubble: Designing in a Complex World, Cambridge: The MIT press.

Valtonen, A. (2007), Redefining Industrial Design: Change in the Design Practice in Finland, Helsinki: University of Art and Design.

Verganti, R. (2009), Design driven innovation, Milano: Etas.

Verganti, R. (2017), Overcrowded. Designing meaningful products in a world awash with ideas, Milano: Hoepli.

WDO (2016), Definition of industrial design, available at: https://wdo.org/about/definition/ (accessed 2 April 2021).

World Economic Forum (2020), The Future of Jobs Report 2020, available at: https://www. weforum.org/reports/the-future-of-jobs-report-2020 (accessed 14 March 2021).

Wróblewski, Ł. (2015), Websites of Polish cultural and educational organizations in the Czech Republic – analysis and evaluation. Forum Scientiae Oeconomia, 3(1): 65-78.

Yus, R. (2011), Competence-based education: between the rhetoric and the reality. A proposal for a curricular solution, Publicaciones, 41:141–59.

Zingale, S. (2012), Interpretazione e progetto. Semiotica dell'inventiva, Milano: Franco Angeli.

Zurlo, F. (2012), Le strategie del design. Disegnare il valore oltre il prodotto, Milano: Libraccio editore.