

Stream: Sharing Good Practice

Submission title:

Learning-by-doing as a strategy for student engagement

Presenter:

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Fans of TED star Ken Robinson (2006) will immediately recognise the benefits of learning-by-doing (LBD): it prioritises activity over passive reception, allows students the space to experience problems first-hand and encourages them to explore their own solutions. This has the potential to nurture students' creativity and self-efficacy, just two of the soft skills that are relevant to the 21st century workplace (Direitoa et al., 2012; Mitchell et al., 2010; Ferguson and Fernández, 2015). LBD is being recognised as a mainstream educational strategy in various subject areas in diverse parts of the world (Bamber, 2014; Kun Ma et al., 2014; Frache et al., 2017).

This presentation describes experiences using an LBD approach with students in Scotland, France and China. In all cases, the teaching events followed a semi-structured pattern and were several hours in length. Nevertheless, students remained engaged and active throughout the class. There was also evidence of additional work being done outwith the scheduled class time. Student results and feedback suggest that the approach is effective in delivering academic content as well as a positive learning experience. The students were assessed using standard written reports and presentations. Evidence comes mainly from standard results and student feedback. Parallels are drawn with the concept of the flipped classroom and discussion will be welcomed on the applicability of the approach to other subject areas.

Bamber (2014) Developing the creative and innovative potential of young people through non-formal learning in ways that are relevant to employability. European Commission

Direitoa, Anabela Pereira, de Oliveira Duarte (2012) Engineering undergraduates' perceptions of soft skills: relations with self-efficacy and learning styles

Ferguson, Fernández (2015) The role of the university in the innovation ecosystem, and implications for science cities and science parks: A human resource development approach. World Technopolis Review (pISSN 2234-4594 WTR) 4 (3), 132-143.

Frache, Nistazakis and Tombras (2017) Reengineering Engineering Education – Developing a constructively-aligned learning-by-doing model for 21st century education. Global Engineering Education Conference (EDUCON), 2017 IEEE

Kun Ma, Hao Teng, Lixin Du, and Kun Zhang (2014) Project-Driven Learning-by-Doing Method for teaching software engineering using virtualization technology. International Journal of Emerging Technologies in Learning 9(9)

Mitchell, Skinner, and White (2010). Essential Soft Skills for Success in the Twenty-First Century Workforce as Perceived as Business Educators. Delta Pi Epsilon Journal, 52(1): 43-53.

Robinson (2006) Do schools kill creativity? TED 2006. Online at https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity