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Gabriel J. Costello

# The Teaching of Design and Innovation

Principles and Practices

 Springer

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Galway-Mayo Institute of Technology  
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*To Mary with love*

# Preface

My background and interest in design and innovation is grounded in 20 years of industrial experience in product development and new product introduction. The subsequent teaching of the subject in a third-level institute has been an interesting and challenging voyage through a largely uncharted territory. Design and innovation is always a journey into the unknown, and its teaching must accommodate this scenario. My aim is to distil my experience in order to provide some guiding principles and practices for others undertaking this journey.

## Purpose and Motivation for This Book

There is a growing and varied body of publications and web resources available on the topic of design and innovation. However, there is a lack of studies on how to teach the subject. The objectives and contributions of this book are as follows:

- To support the teaching of design and innovation in a wide range of educational institutes.
- To provide a philosophical and theoretical underpinning to the education of design and innovation.
- To provide case studies of teaching design and innovation.
- To propose the concept of simulation-action learning (SAL) in order to extend the pedagogical approach.
- To engage in the debate on contemporary issues in technological education.

## Who Will Benefit from This Book?

There are three cohorts for which this book is intended.

1. Capstone undergraduate and postgraduate programmes.
  - To provide a framework for the teaching of design and innovation modules across all engineering disciplines.
  - To inform programmes specialising in industrial design or related disciplines.
  - To support programmes in information and communications technology (ICT) and information systems (IS) that include modules on business process design or similar.
  - To enable the introduction of “enterprise” modules in masters and doctoral programmes that can instil the motivation and skills required for the application of research as products or services in commercial or not-for-profit situations.
  - To assist the delivery of innovation and entrepreneurial modules in science and business schools.
2. Continuing professional development programmes.
  - To enable the development of higher-order design and innovation capabilities in industry and public service organisations to meet contemporary needs.
  - To provide a framework for the development of cross-disciplinary teams required to address complex organisational and so-called societal wicked problems.
  - To facilitate organisations moving from being product-centric to being service-centric.
3. Research programmes.
  - To provide a resource for future research and debate on the teaching of design and innovation and to contribute to the development of the broader area of design and innovation research.

Galway, Ireland

Gabriel J. Costello

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Galway, Ireland

Gabriel J. Costello



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# About the Author

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