

LEARNING EXPERIENCE DESIGN

Embracing human diversity through educational technology

Alessia Brischetto



Informazioni per il lettore

Questo file PDF è una versione gratuita di sole 20 pagine ed è leggibile con



La versione completa dell'e-book (a pagamento) è leggibile con Adobe Digital Editions. Per tutte le informazioni sulle condizioni dei nostri e-book (con quali dispositivi leggerli e quali funzioni sono consentite) consulta [cliccando qui](#) le nostre F.A.Q.



Direction: Silvia Piardi

Scientific Board:

**Alessandro Biamonti, Ezio Manzini, Carlo Martino,
Francesca Tosi, Mario Piazza, Promil Pande**

Over the last few years the international design research network has become an important reality, which has facilitated the sharing of ideas and opinions, improved understanding of the subject and increased awareness of the potential of design in various socio-geographical contexts.

The current expansion of the educational network allows teachers, students, researchers and professionals to meet, both online and in person.

It would seem therefore that the time is now right to propose a new series of books on design, contributing the construction of the international design community, helping authors bring their work onto the world scene.

The Design International series is thus born as a cultural setting for the sharing of ideas and experiences from the different fields of design, a place in which you can discover the wealth and variety of design research, where different hypotheses and different answers present themselves, in an attempt to draw up a map of Italian design, though in a continuous comparison with the world scene.

Different areas of design will be investigated, such as for example: fashion, interior design, graphic design, communication design, product and industrial design, service and social innovation design, interaction design and emotional design.

Books published in this series are selected by the Scientific Board and submitted to two referees for peer-review.

LEARNING EXPERIENCE DESIGN

Embracing human diversity through educational technology



Alessia Brischetto

ISBN e-book: 9788835102113

Copyright © 2020 by FrancoAngeli s.r.l., Milano, Italy.

All rights reserved. As you download this e-book, you do accept all the license conditions described in www.francoangeli.it.

To find out any information about books and journals published by FrancoAngeli, please join us on the World Wide Web at www.francoangeli.it.

Contents

Foreword - Design for learning: the project for inclusion

by *Francesca Tosi*

pag. 11

Introduction

» 13

1. The contemporary dimension of inclusive learning

» 17

1.1 Introduction

» 17

1.2 Socio-technological background

» 19

1.3 Knowledge society and the role of learning

» 21

1.4 Community strategies for the valorization of differences

» 22

1.5 The educational technologies sectors

» 24

1.6 Disability, inclusion e new technologies: from the
accessibility to universal design

» 26

1.7 Towards a new definition of disability

» 31

1.8 ICF: a biopsychosocial model

» 32

1.8.1 Assistive Technologies and ICF

» 34

1.9 Access to technologies: defining accessibility

» 41

1.10 Design for all: what are the tools and methodologies
involved?

» 45

2. Digital Learning: strategies and initiatives at an international and national level

» 48

2.1 Introduction

» 48

2.2 European strategies for inclusive education

» 52

2.2.1	The European ICT4I project: new technologies for inclusion	pag.	58
2.3	Italian Policies and Initiatives in the education environment	»	62
2.4	Italian Policies and Initiatives in the University field	»	69
2.5	Learning disorders in Europe and worldwide	»	74
2.6	Universal Design for Learning: the CAST's experience	»	76
2.7	Report on the main technologies supporting disabled students	»	82
3.	Cognitive aspects of digital learning	»	86
3.1	Learning models mediated by ICT	»	86
3.2	Learning theories	»	90
3.3	Behaviourism: Learning as the Science of Behaviour Change	»	92
3.4	Cognitivism: the functioning of mind and machines	»	97
	3.4.1 Hypertext and cognitivism	»	105
3.5	Constructivism: from machines to networks	»	106
3.6	Mayer's theory: Multimedia Learning	»	112
3.7	Analysis of the main learning models	»	117
3.8	Collaborative learning	»	123
3.9	Network learning: e-learning	»	124
	3.9.1 Design standards in e-learning	»	128
	3.9.2 Mobile learning	»	130
	3.9.3 Conversational framework	»	131
	3.9.4 Activity Theory	»	132
	3.9.5 The Engeström Model	»	135
3.10	Conclusions	»	136
4.	The contribution of design: disciplinary framework and methodological aspects	»	139
4.1	Ergonomics and Human Factors	»	139
4.2	The Human-Centred Design approach	»	140
4.3	Human-Centred Design: strategy and tools	»	143

4.3.1	Understanding and specifying the usage context	pag.	144
4.3.2	Verification and validation phases	»	148
4.4	Usability tests	»	149
4.4.1	Heuristic evaluation	»	151
4.5	The User Experience	»	153
4.6	Universal Accessibility	»	158
4.7	Design for All	»	159
4.8	Universal Design	»	161
4.9	Inclusive Design and user exclusion models	»	162
5.	Towards the definition of an operational strategy to plan inclusive learning experiences	»	168
5.1	Introduction	»	168
5.2	Advantages and disadvantages of ICT in formal learning contexts	»	170
5.3	Learning models mediated by ICT	»	171
5.4	Inclusive project strategies: UD and UD	»	172
5.5	Analysis of UDL platforms	»	173
5.6	Affinity between accessibility standards and the WCAG 2.0 and UDL guidelines	»	178
5.7	Moodle platform analysis	»	181
5.8	The contribution of the experts	»	182
5.9	Development of evaluation tools: simulation platform 0.2	»	186
6.	Design of learning experience: case studies	»	189
6.1	Research objectives and methodology	»	189
6.2	Case study 1: VL4all learning platform	»	192
6.2.1	Evaluation phase	»	192
6.2.2	Results of the user-based evaluation phase	»	193
6.2.3	Design and predictions	»	197
6.3	Case study 2: the Moodle 2.0 platform	»	203
6.3.1	Evaluation phase	»	203
6.3.2	Questionnaire results	»	207

6.3.3	User observation results	pag.	208
6.3.4	Conclusions of the testing phase with users	»	210
6.3.5	Focus Groups Results	»	211
6.3.6	Design and prediction	»	213
7.	Conclusion	»	216
	References	»	219
	Appendix 1 (chapter 3): Guidelines and standards	»	231
	Appendix 2 (chapter 6): Questionnaire	»	233