## Table of Contents

Preface .............................................................................................................................................. xxvii

**Volume I**

**Section 1**  
**Fundamental Concepts and Theories**

This section serves as a foundation for this exhaustive reference tool by addressing underlying principles essential to the understanding of Gamification. Chapters found within these pages provide an excellent framework in which to position Gamification within the field of information science and technology. Insight regarding the critical incorporation of global measures into Gamification is addressed, while crucial stumbling blocks of this field are explored. With 18 chapters comprising this foundational section, the reader can learn and choose from a compendium of expert research on the elemental theories underscoring the Gamification discipline.

**Chapter 1**  
The Gamification Experience: UXD with a Gamification Background .............................................. 1  
* Cathie Marache-Francisco, Université de Lorraine & SAP, France  
  Eric Brangier, Université de Lorraine, France

**Chapter 2**  
Lessons from the STEM Sector ....................................................... 21  
* Vachon M.C. Pugh, Electronic Arts, USA

**Chapter 3**  
A Qualitative Investigation of Gamification: Motivational Factors in Online Gamified Services and Applications ................................................................. 32  
* Amon Rapp, University of Torino, Italy

**Chapter 4**  
Video Game Framings .................................................................................. 49  
* Annika Rockenberger, University of Oslo, Norway
Chapter 5
Neurofeedback and Serious Games ................................................................. 83
   Manuel Ninaus, University of Graz, Austria
   Matthias Witte, University of Graz, Austria
   Silvia E. Kober, University of Graz, Austria
   Elisabeth V. C. Friedrich, University of Graz, Austria
   Jürgen Kurzmann, University of Graz, Austria
   Erwin Hartsuiker, Mind Media BV, The Netherlands
   Christa Neuper, University of Graz, Austria & Graz University of Technology, Austria
   Guilherme Wood, University of Graz, Austria

Chapter 6
Dream Lucidity: Yume Nikki and Learning the Empathy Dreamscape .................... 113
   Concetta Bommarito, University of Central Florida, USA
   Kathryn Dunlap, University of Central Florida, USA

Chapter 7
The Protagonist and Their Avatar: Learner Characteristics in a Culture of Simulation......... 129
   Michael P. McCreery, University of Nevada, USA
   S. Kathleen Krach, Florida State University, USA
   Amanda Nolen, University of Arkansas, USA

Chapter 8
Creativity in Education: Play and Exploratory Learning........................................... 139
   Beth Ferholt, Brooklyn College, City University of New York, USA
   Monica Nilsson, Jönköping University, Sweden
   Anders Jansson, Jönköping University, Sweden & Stockholm University, Sweden
   Karin Alnervik, Jönköping University, Sweden

Chapter 9
A Match Made in “Outer Heaven:” The Digital Age Vis-à-Vis the Bomb in Guns of the Patriots .................................................................................................................. 159
   Jorge Gomez, University of Texas at El Paso, USA

Chapter 10
Training, Teaching, and Learning ............................................................................ 194
   Christos Kouroupetroglou, ALTEC Software, Greece

Chapter 11
Digital Literacy Concepts and Definitions: Implications for Educational Assessment and Practice .................................................................................................................. 228
   Patricia Boechler, University of Alberta, Canada
   Karon Dragon, University of Alberta, Canada
   Ewa Wasniewski, University of Alberta, Canada
Chapter 12
The Effects of Avatar-Based Customization on Player Identification .................................................. 247
Selen Turkay, Harvard University, USA
Charles K. Kinzer, Columbia University, USA

Chapter 13
Capturing the Semantics of Simulation Learning with Linked Data .................................................. 273
Irene Celino, Politecnico di Milano, Italy
Daniele Dell’Aglio, Politecnico di Milano, Italy

Chapter 14
A Qualitative Analysis of Online Gaming: Social Interaction, Community, and Game Design ........ 296
Zaheer Hussain, University of Derby, UK
Mark D. Griffiths, Nottingham Trent University, UK

Chapter 15
Serious Gaming at School: Reflections on Students’ Performance, Engagement and Motivation ..... 314
Rosa Maria Bottino, Istituto Tecnologie Didattiche (ITD) - Consiglio Nazionale delle Ricerche (CNR), Italy
Michela Ott, Istituto Tecnologie Didattiche (ITD) - Consiglio Nazionale delle Ricerche (CNR), Italy
Mauro Tavella, Istituto Tecnologie Didattiche (ITD) - Consiglio Nazionale delle Ricerche (CNR), Italy

Chapter 16
Playful Interfaces for Scientific Image Data: A Case for Storytelling .................................................. 330
Amalia Kallergi, Leiden University, The Netherlands
Fons J. Verbeek, Leiden University, The Netherlands

Chapter 17
ExerLearning®: Movement, Fitness, Technology, and Learning ......................................................... 349
Judy Shasek, ExerLearning

Chapter 18
GBL as PBL: Guidelines for Game-Based Learning in the Classroom and Informal Science Centers .......................................................................................................................... 364
Brad Hoge, University of Houston – Downtown, USA

Section 2
Development and Design Methodologies
This section provides in-depth coverage of conceptual architecture frameworks to provide the reader with a comprehensive understanding of the emerging developments within the field of Gamification. Research fundamentals imperative to the understanding of developmental processes within Gamification are offered. From broad examinations to specific discussions on methodology, the research found within this section spans the discipline while offering detailed, specific discussions. From basic designs to abstract development, these chapters serve to expand the reaches of development and design technologies within the Gamification community. This section includes 24 contributions from researchers throughout the world on the topic of Gamification.
Chapter 19
Cognitive Load and Empathy in Serious Games: A Conceptual Framework............................... 390
  Wen-Hao David Huang, University of Illinois – Urbana-Champaign, USA
  Sharon Tettegah, University of Illinois – Urbana-Champaign, USA

Chapter 20
A Serious Games Framework for Health Rehabilitation .............................................................. 404
  Paula Alexandra Rego, Polytechnic Institute of Viana do Castelo, Portugal & Laboratory of
  Artificial Intelligence and Computer Science, Portugal
  Pedro Miguel Moreira, Polytechnic Institute of Viana do Castelo, Portugal & Laboratory of
  Artificial Intelligence and Computer Science, Portugal
  Luís Paulo Reis, University of Minho, Portugal & Laboratory of Artificial Intelligence and
  Computer Science, Portugal

Chapter 21
Study Design and Data Gathering Guide for Serious Games’ Evaluation ................................... 425
  Jannicke Baalsrud Hauge, Bremer Institut für Produktion und Logistik (BIBA), Germany
  Elizabeth Boyle, University of the West of Scotland, UK
  Igor Mayer, Delft University of Technology, The Netherlands
  Rob Nadolski, Open University of The Netherlands, The Netherlands
  Johann C. K. H. Riedel, Nottingham University, UK
  Pablo Moreno-Ger, Universidad Complutense de Madrid
  Francesco Bellotti, Università degli Studi di Genova, Italy
  Theodore Lim, Heriot-Watt University, UK
  James Ritchie, Heriot-Watt University, UK

Chapter 22
Balancing Fun and Learning in a Serious Game Design.............................................................. 452
  Christopher Franzwa, Rowan University, USA
  Ying Tang, Rowan University, USA
  Aaron Johnson, Rowan University, USA
  Talbot Bielefeldt, Clearwater Program Evaluation, USA

Chapter 23
Effects of the Digital Game-Development Approach on Elementary School Students’ Learning
Motivation, Problem Solving, and Learning Achievement......................................................... 472
  Hui-Chun Chu, Soochow University, Taiwan
  Chun-Ming Hung, Tainan Municipal Haidong Elementary School, Taiwan
Chapter 24
Non-Player Characters and Artificial Intelligence ................................................................. 488
  Gonçalo Pereira, INESC-ID, Portugal & University of Lisbon, Portugal
  António Brisson, INESC-ID, Portugal & University of Lisbon, Portugal
  João Dias, INESC-ID, Portugal & University of Lisbon, Portugal
  André Carvalho, INESC-ID, Portugal & University of Lisbon, Portugal
  Joana Dimas, INESC-ID, Portugal & University of Lisbon, Portugal
  Samuel Mascarenhas, INESC-ID, Portugal & University of Lisbon, Portugal
  Joana Campos, INESC-ID, Portugal & University of Lisbon, Portugal
  Marco Vala, INESC-ID, Portugal & University of Lisbon, Portugal
  Iolanda Leite, INESC-ID, Portugal & University of Lisbon, Portugal
  Carlos Martinho, INESC-ID, Portugal & University of Lisbon, Portugal
  Rui Prada, INESC-ID, Portugal & University of Lisbon, Portugal
  Ana Paiva, INESC-ID, Portugal & University of Lisbon, Portugal

Chapter 25
Assessment Integration in Serious Games.................................................................................. 515
  Thomas Hainey, University of the West of Scotland, UK
  Thomas M. Connolly, University of the West of Scotland, UK
  Yaëlle Chaudy, University of the West of Scotland, UK
  Elizabeth Boyle, University of the West of Scotland, UK
  Richard Beeby, University of the West of Scotland, UK
  Mario Soflano, University of the West of Scotland, UK

Chapter 26
Identifying Student Types in a Gamified Learning Experience............................................. 541
  Gabriel Barata, INESC-ID, Universidade de Lisboa, Portugal
  Sandra Gama, INESC-ID, Universidade de Lisboa, Portugal
  Joaquim Jorge, INESC-ID, Universidade de Lisboa, Portugal
  Daniel Gonçalves, INESC-ID, Universidade de Lisboa, Portugal

Volume II

Chapter 27
From Chaos Towards Sense: A Learner-Centric Narrative Virtual Learning Space ................. 559
  Torsten Reiners, Curtin University, Australia
  Lincoln C. Wood, Auckland University of Technology, New Zealand & Curtin University, Australia
  Jon Dron, Athabasca University, Canada

Chapter 28
Designing Educational Games: A Pedagogical Approach..................................................... 576
  Stephen Tang, Liverpool John Moores University, UK
  Martin Hanneghan, Liverpool John Moores University, UK
Chapter 29
Towards a Subjectively Devised Parametric User Model for Analysing and Influencing Behaviour Online Using Neuroeconomics

Jonathan Bishop, European Parliament, Belgium
Mark M. H. Goode, Cardiff Metropolitan University, UK

Chapter 30
Designing with Vulnerable Children: A Researcher’s Perspective

Alma Leora Culén, University of Oslo, Norway
Anna Karpova, University of Oslo, Norway

Chapter 31
Creating Coherent Incidental Learning Journeys on Smartphones Using Feedback and Progress Indicators: The SCAMP Framework

Ann Jones, The Open University, UK
Mark Gaved, The Open University, UK
Agnes Kukulska-Hulme, The Open University, UK
Eileen Scanlon, The Open University, UK
Charlie Pearson, Pearson Publishing, UK
Petros Lameras, Serious Games Institute, UK
Ian Dunwell, Serious Games Institute, UK
Jan Jones, The Open University, UK

Chapter 32
A Literacy and Numeracy E-Learning Mobile Application for Pre-Schoolers

Niall McCarroll, University of Ulster, UK
Kevin Curran, University of Ulster, UK

Chapter 33
Modeling the Player: Predictability of the Models of Bartle and Kolb Based on NEO-FFI (Big5) and the Implications for Game Based Learning

Johannes Konert, Technische Universität Darmstadt, Germany
Michael Gutjahr, Technische Universität Darmstadt, Germany
Stefan Göbel, Technische Universität Darmstadt, Germany
Ralf Steinmetz, Technische Universität Darmstadt, Germany

Chapter 34
Challenges in Game Design

Anna Ursyn, University of Northern Colorado, USA

Chapter 35
The Road to Critical Thinking and Intelligence Analysis

Michel Rudnianski, ORT, France
Milos Kravcik, RWTH Aachen University, Germany
Chapter 36
Green Chemistry: Classroom Implementation of an Educational Board Game Illustrating Environmental Sustainable Development in Chemical Manufacturing ........................................ 714
  Mike Coffey, Nottingham Trent University, UK

Chapter 37
NPP: Power Grid Mutual Safety Assessment ................................................................................ 735
  Eugene Brezhnev, Centre for Safety Infrastructure-Oriented Research and Analysis, Ukraine
  Vyacheslav Kharchenko, Centre for Safety Infrastructure-Oriented Research and Analysis, Ukraine

Chapter 38
Four Strategies for Remote Workforce Training, Development, and Certification........................ 770
  Robert Gibson, Emporia State University, USA

Chapter 39
Causal Modeling to Foster E-Participation in the Policy Decision-Making Life-Cycle ............... 786
  Miquel Angel Piera, Autonomous University of Barcelona, Spain
  Roman Buil, Autonomous University of Barcelona, Spain
  Juan José Ramos, Autonomous University of Barcelona, Spain
  Maria Moise, Romanian-American University, Romania

Chapter 40
Game-Changer: Operationalizing the Common Core using WebQuests and ‘Gamification’ in Teacher Education................................................................. 807
  Roberta Levitt, Long Island University Post, USA
  Joseph Piro, Long Island University Post, USA

Chapter 41
Thresholds of Transmedia Storytelling: Applying Gérard Genette’s Paratextual Theory to The 39 Clues Series for Young Readers................................................................. 826
  Amy Nottingham-Martin, Lawrence University, USA

Chapter 42
Adapting Cognitive Walkthrough to Support Game Based Learning Design ......................... 852
  David Farrell, Glasgow Caledonian University, UK
  David C. Moffat, Glasgow Caledonian University, UK

Section 3
Tools and Technologies

This section presents an extensive coverage of various tools and technologies available in the field of Gamification that practitioners and academicians alike can utilize to develop different techniques. These chapters enlighten readers about fundamental research on the many tools facilitating the burgeoning field of Gamification. It is through these rigorously researched chapters that the reader is provided with countless examples of the up-and-coming tools and technologies emerging from the field of Gamification. With 17 chapters, this section offers a broad treatment of some of the many tools and technologies within the Gamification field.
Chapter 43
A Rating Tool for Sharing Experiences with Serious Games

Maurice Hendrix, The University of Northampton, UK
Per Backlund, University of Skövde, Sweden
Boris Vampula, National Education and Teacher Training Agency, Croatia

Chapter 44
Video Game Consoles: Evolution of Leader and Followers’ Positions

Nabyla Daidj, TELECOM Business School, France

Chapter 45
Multimedia Technologies in Education

Lucio Tommaso De Paolis, University of Salento, Italy
Egidijus Vaškevičius, Vytautas Magnus University, Lithuania
Aušra Vidugirienė, Vytautas Magnus University, Lithuania

Chapter 46
The Quest for a Massively Multiplayer Online Game that Teaches Physics

Ricardo Javier Rademacher Mena, Futur-E-Scape, LLC, USA

Chapter 47
Minecraft as a Creative Tool: A Case Study

Maria Cipollone, Temple University, USA
Catherine C. Schifter, Temple University, USA
Rick A. Moffat, Temple University, USA

Chapter 48
Gamification and Smart Feedback: Experiences with a Primary School Level Math App

Michael D. Kickmeier-Rust, Graz University of Technology, Austria
Eva C. Hillemann, Graz University of Technology, Austria
Dietrich Albert, Graz University of Technology, Austria

Chapter 49
Glove-Based Technology in Hand Rehabilitation

Jamie Taylor, University of Ulster, Northern Ireland
Kevin Curran, University of Ulster, Northern Ireland

Chapter 50
Rewards and Penalties: A Gamification Approach for Increasing Attendance and Engagement in an Undergraduate Computing Module

Hope Caton, Kingston University, UK
Darrel Greenhill, Kingston University, UK
Chapter 51
Ubiquitous Game-Based Learning in Higher Education: A Framework towards the Effective Integration of Game-Based Learning in Higher Education using Emerging Ubiquitous Technologies ................................................................. 1015
  Anna Kasimati, University of Piraeus, Athens
  Sofia Mysirlaki, University of Piraeus, Athens
  Hara Bouta, University of Piraeus, Athens
  Fotini Paraskeva, University of Piraeus, Athens

Chapter 52
Instructional Technology and the Nature of the Gifted and Talented.................................................. 1040
  Jana Willis, University of Houston – Clear Lake, USA
  Douglas J. Steel, University of Houston – Clear Lake, USA
  Vanessa Dodo Seriki, Loyola University Maryland, USA

Chapter 53
Depth Cameras in AAL Environments: Technology and Real-World Applications............................... 1056
  Samuele Gasparini, Università Politecnica delle Marche, Italy
  Enea Cippitelli, Università Politecnica delle Marche, Italy
  Susanna Spinsante, Università Politecnica delle Marche, Italy
  Ennio Gambi, Università Politecnica delle Marche, Italy

Chapter 54
The MORPG-based Learning System for Multiple Courses: A Case Study on Computer Science Curriculum ........................................................................................................................................ 1076
  Kuo-Yu Liu, Providence University, Taiwan

Volume III

Chapter 55
Engaging in Play through Assistive Technology: Closing Gaps in Research and Practice for Infants and Toddlers with Disabilities ................................................................. 1097
  Fiona S. Baker, Emirates College for Advanced Education, UAE

Chapter 56
Assistive Technologies for Brain-Injured Gamers ............................................................................ 1113
  Jason Colman, University of Portsmouth, UK
  Paul Gnanayutham, University of Portsmouth, UK

Chapter 57
A Formal Representation System for Modelling Assistive Technology Systems .............................. 1142
  John Gilligan, Dublin Institute of Technology, Ireland
  Peter Smith, University of Sunderland, UK
Chapter 58
A Step toward Assistive Technology Evidence-Based Practices: Latent Dimensions of Information and Communication Technology ................................................................. 1184
  Boaventura DaCosta, Solers Research Group, USA
  Soohnwa Seok, Korea University, South Korea

Chapter 59
Analysis and Evaluation of Software Artifact Reuse Environments ......................................................... 1212
  Sajjad Mahmood, King Fahd University of Petroleum and Minerals, Saudi Arabia
  Moataz Ahmed, King Fahd University of Petroleum and Minerals, Saudi Arabia
  Mohammad Alshayeb, King Fahd University of Petroleum and Minerals, Saudi Arabia

Section 4
Utilization and Application

This section discusses a variety of applications and opportunities available that can be considered by practitioners in developing viable and effective Gamification programs and processes. This section includes 19 chapters. Contributions included in this section provide excellent coverage of today’s IT community and how research into Gamification is impacting the social fabric of our present-day global village.

Chapter 60
Video Games as a Form of Therapeutic Intervention for Children with Autism Spectrum Disorders ..................................................................................................................... 1224
  Toby Mehl-Schneider, City University of New York, USA
  Shimon Steinmetz, Brooklyn College, City University of New York, USA

Chapter 61
Serious Gaming for User Centered Innovation and Adoption of Disaster Response Information Systems ............................................................................................................................................. 1239
  Kenny Meesters, Tilburg University, The Netherlands
  Bartel Van de Walle, Tilburg University, The Netherlands

Chapter 62
Beyond Gaming: The Utility of Video Games for Sports Performance ......................................................... 1255
  Roma P. Patel, Duke University, USA
  Jerry Lin, University of Southern California, USA
  S. Khizer Khaderi, University of California, USA

Chapter 63
Measuring User Experience in Board Games .............................................................................................................. 1264
  Jonathan Barbara, Saint Martin’s Institute of Higher Education, Malta

Chapter 64
The Play Theory and Computer Games Using in Early Childhood Education .............................................. 1281
  Svetlana Gerkushenko, Volgograd State Socio-Pedagogical University, Russian Federation
  Georgy Gerkushenko, Volgograd State Technical University, Russian Federation
Chapter 65
The Travelling Rose: A Persuasive Game to Stimulate Walking Behaviour of Older Persons in Low SES Neighbourhoods
Valentijn Visch, Delft University of Technology, The Netherlands
Ingrid Mulder, Delft University of Technology, The Netherlands
Wessel Bos, Delft University of Technology, The Netherlands
Richard Prins, Erasmus Medical Center, The Netherlands

Chapter 66
Game-Based Learning as a Promoter for Positive Health Behaviours in Young People
Andrew Sean Wilson, Birmingham City University, UK

Chapter 67
Auditory Experiences in Game Transfer Phenomena: An Empirical Self-Report Study
Angelica B. Ortiz de Gortari, Nottingham Trent University, UK
Mark D. Griffiths, Nottingham Trent University, UK

Chapter 68
A Randomised Controlled Trial to Evaluate Learning Effectiveness Using an Adaptive Serious Game to Teach SQL at Higher Education Level
Thomas Hainey, University of the West of Scotland, UK
Mario Soflano, University of the West of Scotland, UK
Thomas M. Connolly, University of the West of Scotland, UK

Chapter 69
Levelling (Up) the Playing Field: How Feminist Gamers Self-Identify and Learn in Online Communities
Sarmista Das, Champlain College Saint-Lambert, Canada

Chapter 70
Games for Top Civil Servants: An Integrated Approach
Hester Stubbé, TNO, The Netherlands
Josine G. M. van de Ven, TNO, The Netherlands
Micah Hrehovcsik, HKU University of Arts – Utrecht, The Netherlands

Chapter 71
Gleaning Strategies for Knowledge Sharing and Collective Assessment in the Art Classroom from the Videogame, “Little Big Planet’s Creator Spotlights”
Renee Jackson, Concordia University, Canada
William Robinson, Concordia University, Canada
Bart Simon, Concordia University, Canada

Chapter 72
Football Manager as a Persuasive Game for Social Identity Formation
Linda K. Kaye, Edge Hill University, UK
Chapter 73
Fifth Graders’ Flow Experience in a Digital Game-Based Science Learning Environment ............ 1433
   Meixun Zheng, North Carolina State University, USA
   Hiller A. Spires, North Carolina State University, USA

Chapter 74
Modeling Gameplay Enjoyment, Goal Orientations, and Individual Characteristics ................. 1451
   John M. Quick, Arizona State University, USA
   Robert K. Atkinson, Arizona State University, USA

Chapter 75
Identifying Group Processes and Affect in Learners: A Holistic Approach to Assessment in Virtual Worlds in Higher Education .............................................................................................................. 1479
   Kate Thompson, The University of Sydney, Australia
   Lina Markauskaite, The University of Sydney, Australia

Chapter 76
The Use of Facebook as a Pedagogical Platform for Developing Investigative Journalism Skills .................................................................................................................................................. 1506
   Wajeeah Aayeshah, Swinburne University of Technology, Australia
   Saba Bebawi, Swinburne University of Technology, Australia

Chapter 77
l33tsp33k: How Gamers Speak with Impenetrable Efficiency ...................................................... 1523
   R. Kelly Aune, University of Hawaii at Manoa, USA
   Matthew Sharritt, Situated Research, LLC, USA
   Daniel D. Suthers, University of Hawaii at Manoa, USA

Chapter 78
Rhetoric of Game: Utilizing the Game of Tavistock Method on Organizational Politics Training ............................................................................................................................................ 1545
   Ben Tran, Alliant International University, USA

Section 5
Utilization and Application

This section includes a wide range of research pertaining to the social and behavioral impact of Gamification around the world. Chapters introducing this section critically analyze and discuss trends in Gamification. With 16 chapters, the discussions presented in this section offer research into the integration of global Gamification as well as implementation of ethical and workflow considerations for all organizations.

Chapter 79
Psychological Aspects of Serious Games .......................................................................................... 1568
   Elizabeth Boyle, University of the West of Scotland, UK
Chapter 80
Critical Transport: A Serious Game to Teach the Recommendations for the Transport of Critically Ill Patients ................................................................. 1586
  Claudia Ribeiro, INESC-ID, Universidade Técnica de Lisboa, Portugal
  Tiago Antunes, INESC-ID, Universidade Técnica de Lisboa, Portugal
  João Pereira, INESC-ID, Universidade Técnica de Lisboa, Portugal
  Micaela Monteiro, Serviço de Urgência Geral Centro Hospitalar Lisboa Ocidental, Portugal

Chapter 81
Consumer Attitudes toward Online Video Game Purchases...................................................... 1609
  Wilson Ozuem, University of Gloucester, UK
  Michael Borrelli, London Metropolitan University, UK

Chapter 82
The Applicability of Gaming Elements to Early Childhood Education .................................... 1639
  Holly Tootell, University of Wollongong, Australia
  Alison Freeman, University of Wollongong, Australia

Volume IV

Chapter 83
Games and Social Networks ................................................................................................... 1657
  Yulia Bachvarova, Cyntelix, The Netherlands
  Stefano Bocconi, Cyntelix, The Netherlands

Chapter 84
Driving Home the Message: Using a Video Game Simulator to Steer Attitudes Away From Distracted Driving................................................................................. 1673
  Edward Downs, University of Minnesota Duluth, USA

Chapter 85
Rehabilitation Systems in Ambient Assisted Living Environments ........................................ 1688
  A. M. Middleton, National University of Ireland Maynooth, Ireland
  R. P. Harte, National University of Ireland Galway, Ireland
  T. E. Ward, National University of Ireland Maynooth, Ireland

Chapter 86
Games for and by Teachers and Learners ................................................................................ 1706
  Peter van Rosmalen, Open University of The Netherlands, The Netherlands
  Amanda Wilson, University of the West of Scotland, UK
  Hans Hummel, Open University of The Netherlands, The Netherlands

Chapter 87
My Click is My Bond: The Role of Contracts, Social Proof, and Gamification for Sysops to Reduce Pseudo-Activism and Internet Trolling .............................................................................................. 1734

Jonathan Bishop, European Parliament, Belgium

Chapter 88
Exploratory Play in Simulation Sandbox Games: A Review of What We Know About Why Players Act Crazy .......................................................................................................................... 1751

Dominicus Tornqvist, Griffith University, Australia

Chapter 89
Leadership Behaviors among Gamers and Student Leaders .............................................................................................................................. 1771

Ho Wei Tshen, Clinical and Forensic Psychology Branch Ministry of Social and Family Development, Singapore
Angeline Khoo, Nanyang Technological University, Singapore

Chapter 90
Simulation Games as Interventions in the Promotion of Social Skills Development among Children with Autism Spectrum Disorders .......................................................................................................................... 1788

Carolyn Kinsell, Solers Research Group, USA
Boaventura DaCosta, Solers Research Group, USA
Angelique Nasah, Solers Research Group, USA

Chapter 91
Time Factor Assessment in Game-Based Learning: Time Perspective and Time-on-Task as Individual Differences between Players .......................................................................................................................... 1809

Mireia Usart, Universitat Ramon Llull (ESADE), Spain
Margarida Romero, Universitat Ramon Llull (ESADE), Spain

Chapter 92
Women and Men in Computer Science: The Role of Gaming in Their Educational Goals .......................................................................................................................... 1830

Jill Denner, Education, Training, Research, USA
Eloy Ortiz, Education, Training, Research, USA
Linda Werner, University of California, USA

Chapter 93
The Persuasive Language of Action: Interaction in the Digital Age .......................................................................................................................... 1848

Martin van Velsen, Carnegie Mellon University, USA

Chapter 94
A Case for Integration: Assessment and Games .......................................................................................................................... 1865

Alex Moseley, University of Leicester, UK

Section 6
Managerial Impact

This section presents contemporary coverage of the social implications of Gamification, more specifically related to the corporate and managerial utilization of information sharing technologies and applications, and how these technologies can be extrapolated to be used in Gamification. Core tools and concepts are discussed. Equally as crucial, chapters within this section discuss how leaders can utilize Gamification applications to get the best outcomes from their governors and their citizens.

Chapter 95
Students as Customers: Participatory Design for Adaptive Web 3.0.................................................. 1882
Lei Shi, University of Warwick, UK
Alexandra I. Cristea, University of Warwick, UK
Craig Stewart, Coventry University, UK

Chapter 96
Rhetoric of Play: Utilizing the Gamer Factor in Selecting and Training Employees ....................... 1907
Ben Tran, Alliant International University, USA

Chapter 97
Assistive Systems for the Workplace: Towards Context-Aware Assistance .................................. 1936
Oliver Korn, University of Stuttgart, Germany
Markus Funk, University of Stuttgart, Germany
Albrecht Schmidt, University of Stuttgart, Germany

Chapter 98
Career Development among Japanese Female Game Developers: Perspective from Life Stories of Creative Professionals............................................................... 1950
Masahito Fujihara, Senshu University, Japan

Chapter 99
A Look inside the Current Climate of the Video Game Industry......................................................... 1965
Vachon M.C. Pugh, Electronic Arts, USA

Chapter 100
Providing Career Guidance to Adolescents through Digital Games: A Case Study........................ 1975
Ian Dunwell, Coventry University Coventry, UK
Petros Lameras, Coventry University Coventry, UK
Sara de Freitas, Coventry University Coventry, UK
Panos Petridis, Coventry University Coventry, UK
Maurice Hendrix, Coventry University Coventry, UK
Sylvester Arnab, Coventry University Coventry, UK
Kam Star, PlayGen, UK

Section 7
Critical Issues

This section contains 4 chapters, giving a wide variety of perspectives on Gamification and its implications. Within the chapters, the reader is presented with an in-depth analysis of the most current and relevant issues within this growing field of study. Crucial questions are addressed and alternatives offered.

Chapter 101
Does Game Quality Reflect Heuristic Evaluation? Heuristic Evaluation of Games in Different Quality Strata ................................................................. 1991
  Björn Strååt, Stockholm University, Sweden
  Fredrik Rutz, Stockholm University, Sweden
  Magnus Johansson, Stockholm University, Sweden

Chapter 102
From the “Damsel in Distress” to Girls’ Games and Beyond: Gender and Children’s Gaming....... 2005
  Alyson E. King, University of Ontario, Canada
  Aziz Douai, University of Ontario, Canada

Chapter 103
Can Exergaming Promote Physical Fitness and Physical Activity? A Systematic Review of Systematic Reviews................................................................. 2022
  Tuomas Kari, University of Jyvaskyla, Finland

Chapter 104
To Play or to Learn? A Review of Game-Based Math Learning for Motivation and Cognition...... 2040
  Joan J. Erickson, University at Albany, State University of New York, USA

Section 8
Emerging Trends

This section highlights research potential within the field of Gamification while exploring uncharted areas of study for the advancement of the discipline. Introducing this section are chapters that set the stage for future research directions and topical suggestions for continued debate, centering on the new venues and forums for discussion. A pair of chapters on space-time makes up the middle of the section of the final 7 chapters, and the book concludes with a look ahead into the future of the Gamification field, with “‘I Want Them to Feel the Fear…’: Critical Computational Literacy as the New Multimodal Composition.” In all, this text will serve as a vital resource to practitioners and academics interested in the best practices and applications of the burgeoning field of Gamification.

Chapter 105
Learning by Playing: Is Gamification a Keyword in the New Education Paradigm? .................... 2063
  Eduardo Díaz San Millán, University of Salamanca, Spain
  Rubén Gutiérrez Priego, University of Salamanca, Spain

Chapter 106
Reducing Corruption and Protecting Privacy in Emerging Economies: The Potential of Neuroeconomic Gamification and Western Media Regulation in Trust Building and Economic Growth ................................................................................................................................. 2113

Jonathan Bishop, European Parliament, Belgium

Chapter 107
Mobile Cloud Media: State of the Art and Outlook ................................................................. 2126

Yi Xu, Auburn University, USA
Shiwen Mao, Auburn University, USA

Chapter 108
Toward a Feature-Driven Understanding of Students’ Emotions during Interactions with Agent-Based Learning Environments: A Selective Review ................................................................................................................................. 2148

Jason M. Harley, University of Montréal, Canada & McGill University, Canada
Roger Azevedo, North Carolina State University, USA

Chapter 109
Towards a Mobile Learning Pedagogy ............................................................................................ 2167

Scott E. Hamm, Abilene Christian University, USA
Jason Drysdale, University of Colorado Denver, USA
Diana Moore, New England College, USA

Chapter 110
Perceived Best Practices for Faculty Training in Distance Education ........................................... 2186

Michael G. McVey, Penn State University Harrisburg, USA

Chapter 111
“I Want Them to Feel the Fear…”: Critical Computational Literacy as the New Multimodal Composition ................................................................................................................................. 2196

Clifford H. Lee, Saint Mary’s College, USA
Antero D. Garcia, Colorado State University, USA

Index ................................................................................................................................................... xxx