Contents – Part III

Universal Access to Education

Criteria for Designing Blended Learning Materials for Inclusive Education: Perspectives of Teachers and Producers

Ingo K. Bosse

Interaction Design of Digital Teaching Improves Teaching and Learning Effectiveness

Tsung-Chou Chang, Ya-Fen Tsai, and Fong-Gong Wu

Exploring the Interactivity Issues of the Stereoscopic 3D Systems for Design Education

Li-Chieh Chen, Yun-Maw Cheng, Po-Ying Chu, and Frode Eika Sandnes

Enhancing Blended Environments Through Fuzzy Cognitive Mapping of LMS Users’ Quality of Interaction: The Rare and Contemporary Dance Paradigms

Sofia B. Dias, Sofia J. Hadjileontiadou, José Alves Diniz, and Leontios J. Hadjileontiadis

Once Upon a Tablet: A School Toy in the Making

Isabel Cristina G. Frões

AfterNext: Decoding the Future of Higher Education in 2030

Myk Garn

From Trebizond to Al-Andalus: Visualizing the Late Medieval Mediterranean

Eurydice S. Georganteli and Ioanna N. Koukouni

STEM Scalable Model for Enhancing Secondary and Postsecondary Student On-Line Services

Noel Gregg, April Galyardt, and Robert Todd

A TUI-Based Storytelling for Promoting Inclusion in the Preschool Classroom: Preliminary Results on Acceptance

Julián Esteban Gutiérrez Posada, Heiko H. Hornung, Maria Cecilia Martins, and Maria Cecilia Calani Baranauskas

Delivering User-Centered Content on an Inclusive Mobile Platform: How to Produce It and Use It!

Valerie C. Haven
Preparing All Students for 21st Century College and Careers .......................... 109
Margo Izzo, Alexa Murray, Andrew Buck, Victor Johnson, and Eliseo Jimenez

Universal Access to Media and the California Community Colleges
Online Education Initiative ................................................................. 120
Michael James Jayme Johnson

How Competency-Based Education Can Fulfill the Promise
of Educational Technology .............................................................. 127
Sally M. Johnstone and David E. Leasure

Leveraging Virtual Worlds for Electronic Mentoring ............................. 137
Christopher Langston, Nathan Moon, Robert Todd, Noel Gregg, and Gerri Wolfe

Integrating Motion-Capture Augmented Reality Technology
as an Interactive Program for Children ........................................... 149
Chien-Yu Lin, Chien-Jung Chen, Yu-Hung Liu, Hua-Chen Chai,
Cheng-Wei Lin, Yu-Mei Huang, Ching-Wen Chen, and Chien-Chi Lin

A JBrick: Accessible Robotics Programming for Visually Impaired Users ... 157
Stephanie Ludi and Scott Jordan

Effects of Superimposing Salient Graphics on Learning Material ............... 169
Shu Matsuura and Takumi Shigihara

Determining the Efficacy of Communications Technologies and Practices
to Broaden Participation in Education: Insights from a Theory of Change ... 179
Nathan W. Moon, Robert L. Todd, Noel Gregg, Christopher L. Langston,
and Gerri Wolfe

Enhancing Students’ Motivation to Learn Software Engineering
Programming Techniques: A Collaborative and Social Interaction .......... 189
Ricardo Rodrigues Nunes, Daniela Pedrosa, Benjamim Fonseca,
Hugo Paredes, José Cravino, Leonel Morgado, and Paulo Martins

Guidelines for Designing Accessible Digital (Text) Books: The Italian Case ... 202
Eliseo Sciarretta, Andrea Ingrosso, and Alessandra Carriero

The Evolution of an Online Approach to Preparing Young Students
with Disabilities for College and Careers ......................................... 214
Clark A. Shingledecker and Jennifer Barga

The Promise and Pitfalls of Virtual Worlds to Enhance STEM Education
Success: Summary of the GSAA BreakThru Model .............................. 224
Robert L. Todd
Quality Analysis of Polish Universities Based on POE
Method - Description of Research Experiences .......................... 236
Dorota Winnicka-Jaslowska

E-mentoring Supports for Improving the Persistence of Underrepresented
Students in On-line and Traditional Courses ................................. 243
Gerri Wolfe and Noel Gregg

Comparison Research Between ICT-Based Design and Traditional Design
for Hearing Impaired Children: A Case Study on Speech Training Tool. .... 252
Ying Yang, Junnan Yu, Wenyi Cai, and Ting Han

Universal Access to Health Applications and Services

Haptics-Enabled Surgical Training System with Guidance
Using Deep Learning ................................................................. 267
Ehren Biglari, Marie Feng, John Quarles, Edward Sako, John Calhoon,
Ronald Rodriguez, and Yusheng Feng

A Goal- and Context-Driven Approach in Mobile Period Tracking
Applications ................................................................. 279
Richard A. Bretschneider

Unforeseen Challenges: Adopting Wearable Health Data Tracking
Devices to Reduce Health Insurance Costs in Organizations ............... 288
Mads Christophersen, Peter Mørck, Tue Odd Langhoff,
and Pernille Bjørn

Rehabilitation of Balance-Impaired Stroke Patients Through Audio-Visual
Biofeedback ................................................................. 300
Cristina Gheorghe, Thomas Nissen, Daniel Christensen, Paula Epure,
Anthony Brooks, and Eva Petersson Brooks

Speech Driven by Artificial Larynx: Potential Advancement
Using Synthetic Pitch Contours ............................................. 312
Hua-Li Jian

Multimodal Feedback for Balance Rehabilitation ................................ 322
Bruce J.P. Mortimer, Braden J. McGrath, Greg R. Mort,
and Gary A. Zets

A Virtual Reality System for Occupational Therapy with Hand Motion
Capture and Force Feedback: A Pilot Study of System Configuration .... 331
Kouki Nagamune, Yosuke Uozumi, and Yoshitada Sakai
Methodology for Evaluating the Usability of Public Equipment for Physical Activity: An Approach to Interface with Blind and Low Vision Individuals .................................................. 338
   Sabrina Talita de Oliveira and Maria Lucia Leite Ribeiro Okimoto

Virtual Liver Surgical Simulator by Using Z-Buffer for Object Deformation . . . 345
   Katsuhiko Onishi, Hiroshi Noborio, Masanao Koeda, Kaoru Watanabe, Kiminori Mizushino, Takahiro Kunii, Masaki Kaibori, Kosuke Matsui, and Masanori Kon

Fashion Design for Health: A Multidisciplinary Approach .................... 352
   Mariana Rachel Roncoletta

Smart Mirror Where I Stand, Who Is the Leanest in the Sand? ............. 364
   Marianna Saba, Riccardo Scateni, Fabio Sorrentino, Lucio Davide Spano, Sara Colantonio, Daniela Giorgi, Massimo Magrini, Ovidio Salvetti, Novella Buonaccorsi, and Ilaria Vitali

A Virtual Reality Lower-Back Pain Rehabilitation Approach:
System Design and User Acceptance Analysis .............................. 374
   Wu-Chen Su, Shih-Ching Yeh, Si-Huei Lee, and Hsiang-Chun Huang

‘Weather’ Wearable System: A Design Exploration to Facilitate the Collaboration and Communication with Chronic Pain Patients ............. 383
   Xin Tong, Diane Gromala, Amber Choo, Mahsoo Salimi, and Jeewon Lee

The Benefits of Haptic Feedback in Telesurgery and Other Teleoperation Systems: A Meta-Analysis .................................................. 394
   Bernhard Weber and Clara Eichberger

Games for Learning and Therapy

An Evaluation Method of Educational Computer Games for Deaf Children Based on Design Guidelines ................................. 409
   Rafael dos Passos Canteri, Laura Sánchez García, Tanya Amara Felipe, Diego Roberto Antunes, and Carlos Eduardo Iatskiu

Resonance: An Interactive Tabletop Artwork for Co-located Group Rehabilitation and Play ................................................... 420
   Jonathan Duckworth, Nick Mumford, Karen Caeyenberghs, Ross Eldridge, Scott Mayson, Patrick R. Thomas, David Shum, Gavin Williams, and Peter H. Wilson
Increasing Super Pop VR™ Users’ Intrinsic Motivation by Improving the Game’s Aesthetics .......................... 432
  Sergio Garcia-Vergara, Hongfei Li, and Ayanna M. Howard

Games for Change: The Strategic Design of Interactive Persuasive Systems .... 442
  Igor Revoredo Hosse and Rachel Zuanon

Developing a Digital Game for Domestic Stroke Patients’ Upper Extremity Rehabilitation – Design and Usability Assessment .......................... 454
  Lan-Ling Huang, Mei-Hsiang Chen, Chao-Hua Wang, and Chang-Franw Lee

An Integrated Playful Music Learning Solution ........................................ 462
  Kristoffer Jensen and Søren Frimodt-Møller

A Game-like Application for Dance Learning Using a Natural Human Computer Interface ........................................ 472
  Alexandros Kitsikidis, Kosmas Dimitropoulos, Deniz Uğurca, Can Bayçay, Erdal Yılmaz, Filareti Tsalakanidou, Stella Douka, and Nikos Grammalidis

Augmentation of Board Games Using Smartphones .................................. 483
  Artūras Kulšinskas, Čătălin Bălan, Nicholas Bukdahl, and Anthony Lewis Brooks

Games Accessibility for Deaf People: Evaluating Integrated Guidelines ....... 493
  Ana L.K. Waki, Guilherme S. Fujiyoshi, and Leonelo D.A. Almeida

Enhancing Self-Motivation Through Design of an Accessible Math App for Children with Special Needs ............................................. 505
  J. MacCalla, Jin Xu, and Ayanna Howard

The Use of Multisensory User Interfaces for Games Centered in People with Cerebral Palsy ....................................................... 514
  Eliza Oliveira, Glauco Sousa, Icaro Magalhães, and Tatiana Tavares

SPELTRA: A Robotic Assistant for Speech-and-Language Therapy .............. 525
  Vladimir Robles-Bykbaev, Martín López-Nores, Juan Ochoa-Zambrano, Jorge García-Duque, and José Juan Pazos-Arias

Multimodal Videogames for the Cognition of People Who Are Blind: Trends and Issues ....................................................... 535
  Jaime Sánchez, Ticianne Darin, and Rossana Andrade

Designing Accessible Games with the VERITAS Framework: Lessons Learned from Game Designers ............................................. 547
  Michael James Scott, Fotios Spyridonis, and Gheorghita Ghinea
Gaze Interaction and Gameplay for Generation Y and Baby Boomer Users . . . . 555  
Mina Shojaeizadeh, Siavash Mortazavi, and Soussan Djamashi

Ludic Educational Game Creation Tool: Teaching Schoolers Road Safety . . . 565  
Nikolas Vidakis, Efthymios Syntychakis, Kostantinos Kalafatis,  
Eirini Christinaki, and Georgios Triantafyllidis

Employing Ambient Intelligence Technologies to Adapt Games  
to Children’s Playing Maturity . . . . . . . . . . . . . . . . . . . . . . . . . . . 577  
Emmanouil Zidianakis, Ioanna Zidianaki, Danae Ioannidi,  
Nikolaos Partarakis, Margherita Antona, George Paparoulis,  
and Constantine Stephanidis

Cognitive Disabilities and Cognitive Support

Augmenting Speech-Language Rehabilitation with Brain Computer  
Interfaces: An Exploratory Study Using Non-invasive  
Electroencephalographic Monitoring . . . . . . . . . . . . . . . . . . . . . . . . . . . . 593  
Abeer Al-Nafjan, Areej Al-Wabil, and Yousef Al-Ohali

Usability Heuristics for the Design of Interactive Attention Assessment  
and Rehabilitation Technologies . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 604  
Layla Al-Salhie, Weaam AlRashed, and Areej Al-Wabil

The Effect of Dyslexia on Searching Visual and Textual Content:  
Are Icons Really Useful? . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 616  
Gerd Berget and Frode Eika Sandnes

Defining an Interaction Model for Users with Autism:  
Towards an Autistic User Model . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 626  
Andrés Mejía-Figueroa and J. Reyes Juárez-Ramírez

Analysis and Design of Three Multimodal Interactive Systems to Support  
the Everyday Needs of Children with Cognitive Impairments . . . . . . . . . . . 637  
Stavroula Ntoa, Asterios Leonidis, Maria Koroi, Eleni Papadaki,  
Ilia Adami, George Margetis, Margherita Antona,  
and Constantine Stephanidis

Toward a Piano Lesson System that Gives People with Reduced Cognitive  
Functioning a Sense of Accomplishment . . . . . . . . . . . . . . . . . . . . . . . . . . . 649  
Chika Oshima, Kimie Machishima, and Koichi Nakayama

Jurojin: Designing a GPS Device for People Living with Dementia . . . . . 660  
Mark Palmer and Jude Hancock
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding and Improving Collaborative Skills Among Individuals</td>
<td>669</td>
</tr>
<tr>
<td>with ASD in a Distributed Virtual Environment</td>
<td></td>
</tr>
<tr>
<td>Arpan Sarkar, Joshua Wade, and Zachary Warren</td>
<td></td>
</tr>
<tr>
<td>Presence of Autism Spectrum Disorders in University Students:</td>
<td>681</td>
</tr>
<tr>
<td>Implications for Education and HCI</td>
<td></td>
</tr>
<tr>
<td>Debra Satterfield, Christopher Lepage, and Nora Ladjahasan</td>
<td></td>
</tr>
<tr>
<td>A Virtual Reality Driving Environment for Training Safe Gaze Patterns:</td>
<td>689</td>
</tr>
<tr>
<td>Application in Individuals with ASD</td>
<td></td>
</tr>
<tr>
<td>Joshua Wade, Dayi Bian, Jing Fan, Lian Zhang, Amy Swanson, Medha</td>
<td></td>
</tr>
<tr>
<td>Sarkar, Amy Weitlauf, Zachary Warren, and Nilanjan Sarkar</td>
<td></td>
</tr>
<tr>
<td>Digital Play Therapy for Children with Developmental Disorders</td>
<td>698</td>
</tr>
<tr>
<td>Yukako Watanabe, Yoshiko Okada, Hirotaka Osawa, and Midori Sugaya</td>
<td></td>
</tr>
<tr>
<td>Multimodal Fusion for Cognitive Load Measurement in an Adaptive</td>
<td>709</td>
</tr>
<tr>
<td>Virtual Reality Driving Task for Autism Intervention</td>
<td></td>
</tr>
<tr>
<td>Lian Zhang, Joshua Wade, Dayi Bian, Jing Fan, Amy Swanson, Amy</td>
<td></td>
</tr>
<tr>
<td>Weitlauf, Zachary Warren, and Nilanjan Sarkar</td>
<td></td>
</tr>
<tr>
<td>Design of a Computer-Assisted System for Teaching Attentional Skills</td>
<td>721</td>
</tr>
<tr>
<td>to Toddlers with ASD</td>
<td></td>
</tr>
<tr>
<td>Zhi Zheng, Qiang Fu, Huan Zhao, Amy Swanson, Amy Weitlauf, Zachary</td>
<td></td>
</tr>
<tr>
<td>Warren, and Nilanjan Sarkar</td>
<td></td>
</tr>
<tr>
<td><strong>Author Index</strong></td>
<td>731</td>
</tr>
</tbody>
</table>
Antona, M.; Stephanidis, C. (Eds.)
2015, XIX, 737 p. 262 illus., Softcover
ISBN: 978-3-319-20683-7