IADIS International Conference on Cognition and Exploratory Learning in Digital Age

(CELDA 2008)

Freiburg, Germany
13-15 December 2008

Editors:

Kinshuk
Demetrios G. Sampson
Pedro Isaias
J. Michael Spector
Dirk Ifenthaler

ISBN: 978-1-62748-333-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by the International Association for Development of the Information Society
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the International Association for Development of the Information Society at the address below.

International Association for Development of the Information Society
Rua Sao Sebastiao Da Pedreira
No. 100, 30, 1050-209
Lisbon, Portugal

Phone: 351 21 3151373
Fax: 351 21 3151244

secretariat@celda-conf.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

FOREWORD xi

PROGRAM COMMITTEE xiii

KEYNOTE LECTURES xvii

CONFERENCE TUTORIAL xviii

FULL PAPERS

MODEL BASED KNOWLEDGE MAPPING - A NEW APPROACH FOR THE AUTOMATED GRAPHICAL REPRESENTATION OF ORGANIZATIONAL KNOWLEDGE 3
Andreas Lachner and Pablo Pirnay-Dummer

EXPLORING THE ROLE OF MENTAL MODELS IN STRATEGIC DECISION MAKING 10
Carlos Capelo and João Ferreira Dias

HIGHLY INTEGRATED MODEL ASSESSMENT TECHNOLOGY AND TOOLS 18
Pablo Pirnay-Dummer, Dirk Ifenthaler and J. Michael Spector

DESIGNING GUI FOR THE USER CONFIGURATION OF PERVASIVE AWARENESS APPLICATIONS 29
Theodosia Fokidou, Eleni Romoudi and Irene Mavrommati

TOWARDS A KNOWLEDGE-BASED FREE-TEXT RESPONSE ASSESSMENT SYSTEM 37
Panagiotis Blitsas and Maria Grigoriadou

MODEL BASED ASSESSMENT OF LEARNING DEPENDENT CHANGE DURING A TWO SEMESTER CLASS 45
Nadine Schlomske and Pablo Pirnay-Dummer

PROGRESSION OF MENTAL MODELS THROUGHOUT A COURSE OF INSTRUCTION: SUPPORTIVE INFORMATION, PRACTICE AND PERFORMANCE 54
A. Aubteen Darabi, David W. Nelson and Norbert M. Seel

EPISTEMOLOGICAL AND METHODOLOGICAL ISSUES FOR THE CONCEPTUALIZATION AND DEVELOPMENT OF ICT-TPCK 62
Charoula Angeli and Nicos Valanides

A DISTRIBUTED COGNITION APPROACH TO OVERCOME ALTERNATIVE CONCEPTIONS ABOUT LIGHT AND COLOR 71
Nicos Valanides and Charoula Angeli

TESTING AS FEEDBACK; APPLYING AND INTERPRETING RESPONSE SPECTRUM ANALYSIS AND INTERPRETATION (RSAI) 79
J. C. Powell

DERIVING AND MEASURING GROUP KNOWLEDGE STRUCTURE VIA COMPUTER-BASED ANALYSIS OF ESSAY QUESTIONS: THE EFFECTS OF CONTROLLING ANAPHORIC REFERENCE 88
Roy B. Clariana, Patricia E. Wallace and Veronica M. Godshalk

EMPLOYING STUDENT BLOGS AS REFLECTIVE DIARIES IN A LAB COURSE 96
Michael Derntl

DESIGNING HANDS-ON NETWORK INSTRUCTION USING VIRTUALIZATION 103
Valerie J. H. Powell, Randall S. Johnson, Christopher T. Davis, John C. Turchek and James C. Powell

COGNITION AND STUDENT-CENTERED, WEB-BASED LEARNING: ISSUES AND IMPLICATIONS FOR RESEARCH & THEORY 113
Michael Hannafin and Kathleen Hannafin

USING KOLB'S LEARNING STYLE INVENTORY FOR E-LEARNING PERSONALIZATION 121
Clemens Bechter and Vatcharaporn Esichaikul

THE IMPACT OF PRIOR EXPERIENCE IN USING A VISUALIZATION TOOL ON LEARNING TO PROGRAM 129
Mikko-Jussi Laakso, Teemu Rajala, Erkki Kaila and Tapio Salakoski

THE QUALITATIVE STUDY ON CONTENTS ANALYSIS/ CONSTRUCTION METHOD FOR E-LEARNING ~FOCUSSING ON THE SEMANTIC RELATIONSHIP BETWEEN FIGURES & SENTENCES~ 137
Naomi Nagata and Toshio Okamoto

THE CHALLENGES IN KNOWLEDGE REPRESENTATION FOR ANALYSIS OF INTER-INSTITUTIONAL KNOWLEDGE FLOWS 145
Ieva Zeltmate, Marite Kirikova and Janis Grundspenkis

LEARNING EFFECTS OF SELF-MADE VOCABULARY LEARNING MATERIALS 153
Kazunori Hasegawa, Masatoshi Ishikawa, Norihide Shinagawa, Keiichi Kaneko and Haruko Miyakoda

EVALUATION OF THE DEVELOPMENT OF METACOGNITIVE KNOWLEDGE SUPPORTED BY THE KNOWCAT SYSTEM 160
Manoli Pifarré and Ruth Cobos

CASE STUDIES OF FULLY ONLINE INTERCULTURAL COLLABORATIVE LEARNING 168
Effie Lai-Chong Law and Anh Vu Nguyen-Ngoc

COLLABORATIVE INFORMATION SEARCH IN PRIMARY GRADES: IMPACTS OF DOMAIN KNOWLEDGE 176
Jérôme Dinet

ARGUMENTATION IN STUDENTS' ESSAYS WRITTEN DURING COMPUTER SUPPORTED TEACHING EXPERIMENT 183
Kati Vapalahti, Leena Laurinen and Miika Marttunen

CARTE: AN OBSERVATION STATION TO REGULATE ACTIVITY IN A LEARNING CONTEXT 191
Christophe Courtin

RESEARCH OF COMPUTER SUPPORTED COLLABORATIVE LEARNING IN TRANS-DISCIPLINARY GROUPS 198
Edita Butrime, Rita Marciulyniene and Rita Valteryte

THE APPLICATION OF A TASK-CENTERED APPROACH TO AN ONLINE ENGLISH WRITING COURSE 207
ChanMin Kim, Anne Mendenhall and Tristan Johnson

CULTURAL FEATURES OF E-LEARNING – A EURO-ASIAN COMPARISON 215
Fredric William Swierczek and Clemens Bechter

INTERACTIONS BETWEEN STUDENTS' LEARNING STYLES, ACHIEVEMENT AND BEHAVIOUR IN MISMATCHED COURSES 223
Sabine Graf, Tzu-Chien Liu and Kinshuk

READING COMPREHENSION AND MOTIVATION IN ELEMENTARY SCHOOL STUDENTS USING A WEB-BASED TUTORING SYSTEM 231
Kausalai Kay Wijekumar and Bonnie J.F. Meyer

PRELIMINARY VALIDATION STUDY FOR A LEARNING ENVIRONMENT QUESTIONNAIRE 237
Min Kyu Kim and JungMi Lee

ENHANCING LEARNING FROM INFORMATICS TEXTS 245
Alexandra Gasparinatou, Grammatiki Tsaganou and Maria Grigoriadou

SELF ASSESSMENT: A CRUCIAL PROCESS IN E-TRAINING 253
Paola Nicolini, Tamara Lapucci and Chiara Moroni

PRACTISES IN OLD AGE ICT-EDUCATION 261
Minnamari Naumanen and Markku Tukiainen

THE IMPACT OF DIFFERENT LEARNING STYLES ON LEARNERS' STUDYING PREFERENCES IN THE DOMAIN OF COMPUTER LOCAL NETWORKS 270
Alexandra Gasparinatou and Maria Grigoriadou

LEARNING TO LEARN IN HIGHER EDUCATION 278
Aytac Gogus and Huriye Arikan

COMPARING THE IMPLEMENTATION OF THE CASE STUDY METHOD IN THE CLASSROOM AND FROM DISTANCE USING A COURSE MANAGEMENT SYSTEM 285
Maria Boubouka, Ilias Verginis and Maria Grigoriadou

SHORT PAPERS

EXPERIENCING EDUCATION WITH 3D VIRTUAL WORLDS 295
Laura Benvenuti, Elbert-Jan Hennipman, Evert-Jan R.G. Oppelaar, Gerrit C. van der Veer, Bob Cruijsberg and Geeske Bakker

SPACE USE AND THE ORGANIZATION OF PARTICIPATION IN PEER SUPPORTED LEARNING 301
Lynn S. Cockett and Hartmut B. Mokros

USE OF WEB 2.0 TECHNOLOGIES AND INTERACTION DESIGN TO ENHANCE A NETWORKING INSTRUCTOR COMMUNITY OF PRACTICE 306
Dennis C. Frezzo, Giuseppe Cinque and Maria Cinque

COMMUNITIES OF LEARNING: EXTENDING THE BOUNDARIES OF THE LEARNING EXPERIENCE THROUGH CROSS-INSTITUTIONAL COLLABORATION 311
Pat Gannon-Leary and Elsa Fontainha

INTEGRATED CARE PATHWAYS DEFINITION THROUGH ONLINE COLLABORATIVE LEARNING PLATFORMS 315
Luigi Lella, Ester Torresi, Juri Orazi and Michele Campanelli

CSCL ENVIRONMENT TO PROMPT COLLECTIVE INTELLIGENCE WITH USE OF WEB SERVICES AND NATURAL LANGUAGE PROCESSING 319
Yasuhisa Tamura, Masashi Maejima, Kazuya Sumi, Takayuki Tsurugi, Mariko Himeta, Ritsuko Nishibata, Kenji Ito, Tadayoshi Kayaf, Eiji Tomida, Yohei Okibayashi and Toshio Okamoto

METAPHOR-BASED EDUCATIONAL SOFTWARE FOR BEGINNERS' LEARNING OF OPERATING SYSTEMS 325
Maria Kordaki, George Strimpakos, Zisis Charalampidis and Thanasis Daradoumis

EVALUATING THE LEARNER'S STATE OF KNOWLEDGE WHEN HE/SHE IS LEARNING BY DOING 329
Farida Bouarab-Dahmani, Malik Si-Mohammed, Catherine Comparot and Pierre-Jean Charrel

EDUCATIONAL SUPPORT SYSTEM FOR CIRCUIT EXPERIMENTS BASED ON CIRCUIT TRANSLATION 335
Atsushi Takemura

USING SCREEN CAPTURE SOFTWARE FOR STUDENT FEEDBACK: TOWARDS A METHODOLOGY 339
Billy Brick and Jasper Holmes

VIDEOCLIPQUESTS AS A NEW SETUP FOR LEARNING 343
Axel M. Blessing and Ulrich Kortenkamp

FROM REAL LIFE EXPERIENCES TOWARDS PRODUCTION AND PARTICIPATION IN MOBILE LEARNING 347
Heikki Kynäslahti, Sanna Vahtivuori-Hänninen, Olli Vesterinen, Seppo Tella, Lasse Lipponen and Jarkko Mylläri

HIGH-SCHOOL GIRLS IN A FABRICATION ENGINEERING ENVIRONMENT: A SOUTH AFRICAN EXPERIENCE 351
Nomusa Dlodlo and Ronald Noel Beyers

TECHNOLOGY-ENHANCED LEARNING FOR STUDENTS WITH DEAFNESS IN THE DIGITAL AGE 357
Onintra Poobrasert and Nick Cercone

PERSONAL LEARNING ENVIRONMENTS ON MOBILE DEVICES 361
Kai-Uwe Götzelt and Freimut Bodendorf

ACCEPTANCE OF MODEL-BASED INSTRUCTION AMONG STUDENTS 366
Ulrike Hanke and Elke Huber

TOWARD THE DEVELOPMENT OF ADAPTIVE LEARNING SYSTEM --- INVESTIGATIONS OF BEGINNERS IN PROGRAMMING COURSE BASED ON LEARNING STRATEGIES AND PROGRAMMING TEST WITH GRADUAL LEVELS 371
Tomoko Sagisaka and Shigeyoshi Watanabe

TEACHERS' PERCEPTIONS ABOUT THE USEFULNESS OF INTEGRATING A DIGITAL DEVICE INTO HIGH SCHOOL MATHEMATICS CLASSROOMS 377
Aytac Gogus

IMPROVING TEACHER PERFORMANCE USING AN ENHANCED DIGITAL VIDEO REFLECTION TECHNIQUE 381
Geoffrey A. Wright

LIFE-LONG LEARNING IN THE DIGITAL AGE 385
E. Sjoer, F.W. Jacobs, K.B. de Jong and C. Veeningen

THE RELATIONSHIP BETWEEN MOTIVATION, LEARNING STRATEGIES, AND CHOICE OF ONLINE OR TRADITIONAL LEARNING ENVIRONMENTS 390
Karen Clayton, Fran C. Blumberg and Daniel P. Auld

REFLECTION PAPERS

TRIPOD: A TOOL FOR RETRIEVAL OF PEOPLE, INFORMATION, AND LEARNING 397
Keith Grueneberg, Amy Katriel, Jennifer Lai and Vicky Griffiths-Fisher

A SCALABLE ONLINE WRITING COURSE WITHOUT A LEARNING MANAGEMENT SYSTEM PLATFORM: AN EXPERIENCE REPORT 400
Alton Miller

POTENTIALITIES OF INFORMATION AND COMUNICATION TECHNOLOGIES FOR STUDENTS COMPETENCE ADVANCEMENT 402
Evija Kopeika and Liga Ramute

SEARCHING BY COMMON TERMS - A MODEL AND IDEAL RANKING METHOD FOR NOVICE SEARCHERS 405
Izumi Suzuki, Yoshiki Mikami and Ario Ohsato

VIDEO PRODUCTION AS PEDAGOGYO 408
Päivi Hakkarainen

EXPLORATORY LIFE-LONG LEARNING IN A CO-MOBILITY SOCIETY 411
Masami Suzuki and Keisuke Uehara

MEETING THE CHALLENGES OF THE DIGITAL AGE BY GROUNDING SYMBOLS IN UNDERSTANDING 414
Asghar Iran-Nejad and Mahdiyeh I. Parizi

TEACHER MODELS ABOUT THE KNOWLEDGE OF THEIR STUDENTS 417
Ulrike Hanke, Mariana Baraldini and Ulrich Pfaeffle

PROCEDURAL ADVISORY MODELS AND THE ACQUISITION OF DOMAIN-SPECIFIC SKILLS 420
Bettine Taminiau, Gemma Corbalan, Liesbeth Kester and Jeroen J.G. van Merriënboer

USING INCREMENTAL PROJECTS FOR STUDENT-CENTERED LEARNING 422
Cheer-Sun Yang

AUTHOR INDEX