

EDEN 2018 ANNUAL Conference

Exploring the Micro, Meso and Macro

Navigating between dimensions in the digital learning
landscape

EDEN 2018 Annual Conference

Genoa, Italy

17-20 June 2018

CONFERENCE PROCEEDINGS

Edited by

Airina Volungeviciene, András Szűcs

on behalf of the European Distance and E-Learning Network

European Distance and E-Learning Network, 2018

EDEN 2018 Annual Conference
Genoa, Italy

Published by the European Distance and E-Learning Network

Editors:

Airina Volungeviciene
András Szűcs

EDEN Secretariat, c/o Budapest University of Technology and Economics
H-1111 Budapest, Egrý J. u. 1, Hungary
Tel: (36) 1 463 1628, 463 2537
E-mail: secretariat@eden-online.org
<http://www.eden-online.org>

Conference Publication Sponsor

CONTACT NORTH Online Learning
Apprentissage en ligne



Supported by the Erasmus+ Programme of the European Union
The publication reflects the authors' view, the EACEA and the European Commission are not responsible for any use that may be made of the information it contains.

Copyright Notice 2018 European Distance and E-Learning Network and the Authors

This publication contributes to the Open Access movement by offering free access to its articles and permitting any users to read, download, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software. The copyright is shared by authors and EDEN to control over the integrity of their work and the right to be properly acknowledged and cited.

To view a copy of this licence, visit
<http://www.creativecommons.org/licenses/by/4.0/>

ISBN 978-615-5511-23-3

Introduction

The demand for people with new, enhanced skills is growing. The volume of information produced and shared in all fields is overwhelming. Building the data economy became part of the EU Digital Single Market. Powerful and sophisticated ICT is part of everyday life, and the world of learning is not an exception. Pressure is on all players of the online education community to keep up with new learning solutions, and better supply the skills currently demanded by growing economies.

Open Education continues its success, providing radical advances in knowledge acquisition, sharing, distribution, and improving business models. Digital credentials and open badges are the new currencies which are beginning to transform the economic models in education.

Social and economic tensions continue to raise the issues of scalability, the micro-credentialling of education, training and skill development processes. Practitioners and stakeholders are eagerly seeking right approaches to providing learning opportunities, and many scholars are researching holistic answers.

Micro, meso and macro aspects provide an interesting range of lenses for considering the problem. These aspects may be applied in a general sense, distinguishing between the learning of individuals, learning at the institutional or group levels through a meso lens, and the learning of organizations or societies directed through policies through the macro lens.

Navigating these dimensions are the reshaping of digital pedagogy and online instructional design; the social elements including digital societal mechanisms and the position of the individual in our new era. We have need of systematic awareness and research in the critical era of sustainable socio-cultural aspects as they relate to learning.

European Union initiatives emphasize solutions to emerging needs and seek to improve competitiveness and professional development; enhance cross-sectional skills; and fuel the engines of social innovation – creativity, entrepreneurship, critical thinking and problem solving.

The EDEN 2018 Genova Conference aims to respond to contemporary needs by:

- tracking and demonstrating evidence about the mechanisms and value chains across micro-, meso- and macro-learning
- exploiting the socio-cultural specifics related to the granularity of learning
- digging deeper into finding viable, achievable and scalable solutions
- learning more about didactical design through peer learning and scholarly observation
- discussing structural and operational questions of collaborative - social technologies

Andras Szucs
Secretary General

Airina Volungeviciene
EDEN President

Acknowledgement and thanks are given to the Programme and Evaluation Committee

Airina Volungeviciene, EDEN President, Vytautas Magnus University, Lithuania
Marina Rui, University of Genova, Italy

Diana Andone, Politehnica University of Timisoara, Romania

Ulrich Bernath, Ulrich Bernath Foundation for Research in ODL, Germany

Lisa Marie Blaschke, Carl von Ossietzky University of Oldenburg, Germany

Stefania Bocconi, ITD-CNR, Italy

Mark Brown, National Institute for Digital Learning, Dublin City University, Ireland

Elena Caldirola, University of Pavia, Italy

Wendy Chowne, The London Institute of Banking & Finance, United Kingdom

Alastair Creelman, Linnaeus University, Sweden

Claudio Dondi, Senior Expert in Education and Training, Italy

Helga Dorner, Central European University, Hungary

Josep M. Duarte, Universitat Oberta de Catalunya, Spain

Paolo Ferri, University of Milano Bicocca, Italy

Pierpaolo Limone, University of Foggia and Coordinator of EduOpen, Italy

Stefania Manca, ITD-CNR, Italy

Tommaso Minerva, University of Modena e Reggio Emilia and President of SIEI, Italy

Fabio Nascimbeni, Universidad Internacional de la Rioja, Spain

Mark Nichols, The Open University, United Kingdom

Don Olcott Jr., Carl von Ossietzky University of Oldenburg, Germany

Ebba Ossiannilsson, Swedish Association of Distance Education, Sweden

Mauro Palumbo, University of Genoa, Italy

Wim Van Petegem, Katholieke Universiteit Leuven, Belgium

Antonella Poce, University Roma III, Italy

Alfredo Soeiro, University of Porto, Portugal

Sandra Kucina Softic, University of Zagreb, Croatia

Elsebeth Korsgaard Sorensen, Aalborg University, Denmark

Andras Szucs, Secretary General, EDEN, United Kingdom

Denes Zarka, Budapest University of Technology and Economics, Hungary

TABLE OF CONTENTS

EDUCATIONAL SYSTEMS

Open Universities: The Challenge for Renewal.....	1
<i>Alan Tait, The Open University, United Kingdom</i>	
E-Leadership Literacies for Technology-Enhanced Learning in Higher Education: A Mixed Methods Research Design and Preliminary Framework.....	1
<i>Deborah Arnold, Albert Sangrà, Universitat Oberta de Catalunya, Spain</i>	
Business Processes Support and Automatization Systems in Educational Institutions	10
<i>Katarina Tomičić-Pupek, Vjeran Strahonja, Lana Škvorc, Faculty of Organization and Informatics, University of Zagreb, Croatia</i>	
Characteristics of Digital and Network Society: Emerging Places and Spaces of Learning	19
<i>Margarita Teresevičienė, Giedrė Tamoliūnė, Justina Naujokaitienė, Danutė Pranckutė, Vytautas Magnus University, Lithuania; Ulf Daniel Ehlers, Baden-Württemberg Cooperative State University, Germany</i>	

DEVELOPMENTS IN DIGITAL LEARNING METHODOLOGY

A model of Online Collaborative Project-Based Learning (OCPBL) within a Digital Competence Course in Higher Education	22
<i>Montse Guitert, Teresa Romeu, Marc Romero, Universitat Oberta de Catalunya, Spain</i>	
Support Learning through Microcredentialling – The Case of the MicroHe Initiative.....	31
<i>Ulf-Daniel Ehlers, Baden-Württemberg Cooperative State University, Germany, Anthony Camilleri, Knowledge Innovation Center, Malta, Raimund Hudak, Baden-Württemberg Cooperative State University, Germany, Henri Pirkkalainen, Tampere University, Finland, Matteo Uggeri, Fondazione Politecnico di Milano, Italy</i>	
Individual and Institutional Support in ODL: How the Macro may Benefit from the Micro.....	38
<i>Antonis Lionarakis, Anna Apostolidou, Antonia-Maria Hartofylaka, Maria Niari, Kyriaki Sfakiotaki, Hellenic Open University, Greece</i>	
IHE Delft's Digital Education Transformation	47
<i>Nelson Jorge, Raquel dos Santos, Ger Tielemans, Erwin Ploeger, IHE Delft Institute for Water Education, The Netherlands</i>	
"EdX Insights" Metrics from a Socio-Constructivist Pedagogical Perspective	53
<i>Inés Gil-Jaurena, Daniel Domínguez Figaredo, National Distance Education University (UNED), Spain, Anuchai Theeraroungchaisri, Chulalongkorn University, Thailand, Tsuneo Yamada, The Open University of Japan, Japan</i>	
Teaching in Context: Integrating Mathematical Thinking and Personal Development Planning into the Curriculum for Part-Time, Distance-Learning Engineering Students.....	61
<i>Carol Morris, Sally Organ, Alec Goodyear, The Open University, United Kingdom</i>	
Enhancing Teachers' Intercultural Conflict Management Competences through Digital Game-Based Learning: A Pedagogical Framework.....	69
<i>Frédérique Frossard, Mario Barajas, Universitat de Barcelona, Spain</i>	
LEARNER NEEDS AND ATTITUDES	
Identifying Learner Types in Distance Training by Using Study Times.....	78
<i>Klaus D. Stiller, Regine Bachmaier, University of Regensburg, Germany</i>	

Implementing new Educational Strategies: Synergetic Effects from a University Overarching Project	87
<i>Helen Asklund, Laura Brander, Linda Näsström, Mid Sweden University, Teaching and Learning Services, Sweden</i>	
Three Dimensions of Persistence in Distance Higher Education – The Main Actors:	
Mexican Non-Traditional Students.....	93
<i>Tomás Bautista-Godínez, Damián Canales-Sánchez, Ismene Ithaí Bras-Ruiz, Coordinación de Universidad Abierta y Educación a Distancia – UNAM, México</i>	
What Factors Influence Student Decisions to Drop Online Courses? Comparing Online and Face-to-Face Sections.....	99
<i>Alyse C. Hachey, University of Texas at El Paso, Claire Wladis, Katherine M. Conway, City University of New York, United States of America</i>	
Technical Innovation in Blended Learning: An EU Project on Continuous Vocational Education Using Multiple Devices	108
<i>Peter Mazohl, University of Technology Vienna, Austria, Ebba Ossiannilsson, Swedish Association for Distance Education, Sweden, Harald Makl, Pedagogical University College, Austria</i>	
Qualitative Learning Analytics to Understand the Students’ Sentiments and Emotional Presence in EduOpen.....	115
<i>Fedela Feldia Loperfido, Anna Dipace, Alessia Scarinci, University of Foggia, Italy</i>	
NEW ICT AND MEDIA	
Video Abstracts for Scientific Education.....	123
<i>Margret Plank, Technische Informationsbibliothek (TIB) – German National Library of Science and Technology, Germany, Paloma Marín-Arraiza, Faculty of Philosophy and Sciences – Campus Marília, São Paulo State University, Brazil, Attila Dávid Molnár, Centre for Science Communication and UNESCO Chair for Multimedia in Education, Eötvös Loránd University of Sciences, Hungary</i>	
Using a Blended Business Decision Simulation (BDS) to Gain Practical Business Experience	131
<i>Ingrid le Roux, University of Pretoria, South Africa</i>	
A Tale of Two Simulations in Higher Education: Exploring the Benefits of a Board Game and an Online Simulation	141
<i>Lynette Nagel, Bernice Beukes, Marina Kirstein, Rolien Kunz, University of Pretoria, South Africa</i>	
Assessing the Impact of Virtualizing Physical Labs	151
<i>Evgenia Paxinou, Vasilis Zafeiropoulos, Athanasios Sypsas, Chairi Kiourt, Dimitris Kalles, Hellenic Open University, Greece</i>	
SOCIAL MEDIA, DIGITAL COLLABORATIVE LEARNING	
Communication and Interaction in a Blog-Based Learning Space.....	159
<i>Michelle Harrison, Thompson Rivers University, Canada</i>	
Online Group Learning is Deeply Grounded in Shared Knowledge and Space	169
<i>Marco Bettoni, Steinbeis, Switzerland, Eddie Obeng, Pentacle, United Kingdom, Willi Bernhard, Nicole Bittel, Victoria Mirata, FFHS, Switzerland</i>	
Open Data for Learning: A Case Study in Higher Education.....	178
<i>Juliana E. Raffaghelli, Open University of Catalonia, Spain</i>	

Digital Tools in the Service of Social Media – Opportunities and Roles of Education and Content Supported by Mobile Communication Devices in Support of Informal Education and Digital Competences Development.....	191
<i>György Molnár, Zoltán Szűts, Budapest University of Technology and Economics, Department of Technical Education, Hungary</i>	

Using Social Media Platforms in the United Arab Emirates to Create Ethical, Cultural and Social Awareness through Emotional Intelligence Principles.....	199
<i>Maya AlHawary, Hamdan Bin Mohammed Smart University, United Arab Emirates</i>	

MOOCS: LATEST CONCEPTS AND CASES

From Books to MOOCs and Back Again: An Irish Case Study of Open Digital Textbooks.....	206
<i>Mark Brown, Eamon Costello, Mairéad Nic Giolla Mhichíl, Dublin City University, Republic of Ireland</i>	

Divergent Perceptions from MOOC Designers and Learners on Interaction and Learning Experience: Findings from the Global MOOQ Survey.....	215
<i>António Moreira Teixeira, Maria do Carmo Teixeira Pinto, Universidade Aberta, Portugal, Christian M. Stracke, Open University of the Netherlands, Netherlands, Achilles Kameas, Bill Vassiliadis, Hellenic Open University, Cleo Sgouropoulou, National Quality Infrastructure System, Greece</i>	

Assessing the Effect of Massive Online Open Courses as Remedial Courses in Higher Education	226
<i>Tommaso Agasisti, Giovanni Azzone, Mara Soncin, Politecnico di Milano School of Management, Italy</i>	

MOOCs in Local Young Tertiary Universities: Strategy and Metrics.....	234
<i>Anne-Dominique Salamin, HES-SO, David Russo, HES-SO Valais-Wallis, Switzerland</i>	

DIGITAL COMPETENCES AND SKILLS

A New Approach to Digital Competence Building for University Educators in Europe	242
<i>Fabio Nascimbeni, Universidad Internacional de la Rioja (UNIR), Spain, Daniel Villar-Onrubia, Katherine Wimpenny, Coventry University, United Kingdom, Daniel Burgos, Universidad Internacional de la Rioja (UNIR), Spain</i>	

Visual Turn in the Development of Digital Pedagogical Competencies	249
<i>András Benedek, MTA-BME Open Content Development Resource Group, Hungary</i>	

EPICT Certification Syllabus as Mean to Attest DigCompEdu Competences	255
<i>Giovanni Adorni, University of Genoa, Italy, Margaret Marshall, Epict UK, United Kingdom, Angela Maria Sugliano, EPICT Italia Association, Italy</i>	

The Role of Public Libraries to Support Formal Education Using Smart Technologies	261
<i>Sara Al Marzooqi, Abtar Darshan Singh, Hamdan bin Mohammed Smart University, United Arab Emirates, Edward Robeck, Salisbury University, United States of America</i>	

OPEN EDUCATIONAL RESOURCES

Effective Strategies for Incorporating Open Educational Resources into the Classroom.....	271
<i>Les Pang, Rana Khan, University of Maryland University College, United States of America</i>	

Recognition of Valid Open and Online Learning	276
<i>Airina Volungevičienė, Marius Šadauskas, Danutė Pranckutė, Vytautas Magnus University, Lithuania; Sandra Kucina Softic, SRCE, University of Zagreb, Croatia, Ferenc Tatrai, European Distance and eLearning Network, United Kingdom, Matthias Murawski, Markus Bick, ESCP Europe Business School Berlin, Germany, Julia Busche, Q21, Germany</i>	

Opening-up Education in South-Mediterranean Countries at the Macro, Meso and Micro Level	284
<i>Cristina Stefanelli, Mediterranean Universities Union, Italy, Katherine Wimpenny, Coventry University, United Kingdom, Fabio Nascimbeni, Universidad Internacional de La Rioja, Spain</i>	

The Digital and Network Society Needs for Open Online Learning.....	291
<i>Airina Volungevičienė, Elena Trepulė, Estela Daukšienė, Marius Šadauskas, Vytautas Magnus University, Lithuania, Ulf-Daniel Ehlers, Baden-Wurtemberg Cooperative State University, Germany</i>	

POLICY AND GOVERNANCE

A Digital Learning Ecologies Conceptual Framework in the Microsystem of Online Higher Education..	295
<i>Mitchell Peters, Montse Guitert Catasús, Marc Romero Carbonell, Open University of Catalonia (UOC), Spain</i>	
Changing Lifelong Learning Paradigm and the Digital Learning Age.....	304
<i>Aniko Kalman, Budapest University of Technology and Economics, Department of Technical Education, Hungary</i>	
Balanced Blended Learning: Support for Decision-Makers.....	312
<i>Marald Rouwen, Marjon Baas, Saxion University of Applied Sciences, The Netherlands</i>	
Towards Global Governance in Distance Education.....	316
<i>Elif Toprak, Mehmet Firat, Serpil Koçdar, N. Gizem Koçak, Seçil Kaya Gülen, Erhan Akdemir, Kazim Demirer, Anadolu University, Turkey</i>	
Towards a European Maturity model for Blended Education (EMBED).....	321
<i>Katie Goeman, KU Leuven, Belgium, George Ubachs, EADTU, The Netherlands</i>	
Towards the Creation of a Ranking System for Online Universities: Quali-Quantitative Analysis of a Participatory Workshop	325
<i>Flavio Manganello, Marcello Passarelli, Donatella Persico, Francesca Pozzi, Istituto Tecnologie Didattiche – Consiglio Nazionale Ricerche (ITD-CNR), Italy</i>	
Everything for Everybody? The Need for Distance Education to be Relevant to all its Students	335
<i>Ignatius Gous, University of South Africa, School of Humanities, College of Human Sciences, South Africa</i>	

LEARNING THEORY AND IMPLEMENTATION PRACTICE

Stuck in the Middle? Making Sense of the Impact of Micro, Meso and Macro Institutional, Structural and Organisational Factors on Implementing Learning Analytics	342
<i>Paul Prinsloo, University of South Africa, South Africa, Sharon Slade, The Open University, United Kingdom, Mohammad Khalil, Delft University of Technology, The Netherlands</i>	
Connect or Disconnect: Academic Identity in a Digital Age	351
<i>Sue Watling, University of Hull, United Kingdom</i>	
Model-Based Approach for Penetrating Education Systems by Digital Transformation Knowledge.....	353
<i>Christian-Andreas Schumann, Frank Otto, Claudia Tittmann, Kevin Reuther, Eric Forkel, Jens Baum, Julia Kauper, West Saxon University of Zwickau, Martin-Andreas Schumann, Chemnitz University of Technology, Germany, Feng Xiao, Tongji University, China</i>	
A Practice Orientated Framework to Support Successful Higher Education Online Learning	361
<i>Paula Shaw, University of Derby, England</i>	

NATIONAL DIGITAL EDUCATION CASES

The French Thematic Digital Universities – A 360° Perspective on Open and Digital Learning.....	370
<i>Deborah Arnold, AUNEGE, France</i>	
A Collaboration & Learning Environment to Enable to be a University Leader in Education Innovation.....	379
<i>Willem van Valkenburg, Delft University of Technology, The Netherlands</i>	

Bavarian Virtual university – Best Practice for a Network of Higher Education Online.....	384
<i>Steffi Widera, Ingrid Martin, Bavarian Virtual University, Germany</i>	
Traditional and On-Line Universities, a Partnership for the Present and the Future of Education	391
<i>Maria Amata Garito, Alessandro Caforio, Università Telematica Internazionale UNINETTUNO, Italy</i>	
Blended Learning Teaching: The Story of a Social Network with a History	399
<i>Ana Rodríguez-Groba, Adriana Gewerc, Fernando Fraga-Varela, Almudena Alonso-Ferreiro, University of Santiago de Compostela, Spain</i>	
SOCIO-CULTURAL ASPECTS OF DIGITAL LEARNING	
MuseTech: A Web App to Enhance 21 st Century Skills through Heritage Education	408
<i>Antonella Poce, Francesco Agrusti, Maria Rosaria Re, Università Roma Tre, Italy</i>	
Boundary Crossing: International Students' Negotiating Higher Education Learning with Digital Tools and Resources	417
<i>Mengjie Jiang, Palitha Edirisingha, University of Leicester, United Kingdom</i>	
Supporting Learning in Traumatic Conflicts: Innovative Responses to Education in Refugee Camp Environments	429
<i>Alan Bruce, Imelda Graham, Universal Learning Systems, Ireland, Maria-Antònia Guardiola, UOC, Spain</i>	
Haptic Prototype Assembly Tool for Non-Sighted, Visually Impaired and Fully Sighted Design Students, Studying at a Distance	436
<i>Lisa Bowers, Ryan Hayle, Nick Braithwaite, The Open University, Farshid Amirabdollahian, University Hertfordshire, United Kingdom</i>	
E-LEARNING AT WORK AND FOR THE WORKPLACE	
Using Microlearning Modules in an Integrated Talent Acquisition Framework to Enhance Corporate Talent Management Process	448
<i>Teemu Patala, Context Learning, Finland, Alan Bruce, Universal Learning Systems, Ireland</i>	
Higher Credutation – Degree or Education? The Rise of Microcredentials and its Consequences for the University of the Future.....	456
<i>Ulf-Daniel Ehlers, Baden-Wurttemberg Cooperative State University, Germany</i>	
Online Distance Courses for Older Workers: A Maltese Case Study	466
<i>Joseph Vancell, University of Hull, United Kingdom</i>	
A Multi-Scale Approach to Learning Innovation Design.....	475
<i>Susanna Sancassani, Paolo Marengi, Daniela Casiraghi, METID Politecnico di Milano, Italy</i>	
TRAINING OF DIGITAL UNIVERSITY TEACHERS	
Distance Learning and Teaching: Understanding the Importance of Tuition Observations.....	483
<i>Chris Douce, School of Computing and Communications, The Open University, United Kingdom</i>	
Activity Theory as Design Tool for Educational Projects and Digital Artifacts.....	488
<i>Corrado Petrucco, Cinzia Ferranti, University of Padova, Italy</i>	
“The Cobbler Who Wears the Best Shoes”: How to Educate the Staff of the Higher Education Institutions Using Digital Technologies. Study of the Plekhanov University Experience	495
<i>Olga A. Grishina, Dinara R. Tutaeva, Alexey I. Grishin, Plekhanov Russian University of Economics, Russia</i>	
Educamps in Distance Education: Professional Development and Peer Learning for Student Teachers in ICT	501
<i>Sólveig Jakobsdóttir, University of Iceland, School of Education, Iceland</i>	

CHINA E-LEARNING PANORAMA

A Study on Designing Online Learning Activity	508
<i>Song Li, School of Education and Instruction, The Open University of China, China</i>	
The Open University of China and Chinese Approach to a Sustainable and Learning Society	516
<i>Yanwei Qi, Wei Li, The Open University of China, China</i>	
MOOCs Copyright protection in China	522
<i>Jie Li, The open university of China, China</i>	

POSTERS

The Theory – and Especially the Practical Implementation – of Spaced Repetition in Real Life Study Circumstances	526
<i>Ignatius Gous, University of South Africa, School of Humanities, College of Human Sciences, South Africa</i>	
Does a Rapid Prototyping Method Stimulate our Time-Pressured Teachers to Design Rich and Blended Learning Environments?	527
<i>Sylke Vandercruysse, Sofie Bamelis, Delphine Wante, Kurt Galle, VIVES University of Applied Science, Belgium</i>	
Alebrije Model for the Development and Supply of Educational Content	531
<i>Jorge León Martínez, Edith Tapia-Rangel, National Autonomous University of Mexico (UNAM), Mexico</i>	
International Collaborations in Blended Learning: A Double Degree Model.....	535
<i>Charles Krusekopf, Royal Roads University, Victoria, BC, Canada</i>	
Student Active Learning in Net Based Education – Educational Development in Teaching of Information Literacy.....	541
<i>Anna Gahnberg, Sonja Fagerholm, Swedish National Defence University, Anna Lindh Library, Sweden</i>	
Online Induction to Support Transition to Taught Postgraduate Study.....	544
<i>Megan Kime, University of Leeds, United Kingdom</i>	
An Innovative Tool to Assist the Creation of High Quality Open, and Distance Learning Courses – The Virtual Teachers Toolbox (VTT-BOX.EU)	550
<i>Peter Mazohl, University of Technology Vienna, Austria, Ebba Ossiannilsson, Swedish Association for Distance Education, Sweden, Harald Makl, Pedagogical University College, Austria, Maria Ampartzaki, Michail Kalogiannakis, University of Crete, Greece</i>	
University Students as Digital Content Creators	557
<i>Marco Toffanin, Alessio Surian, University of Padova, Italy</i>	
Efficiency of the Computer Aided Education in Basic Statistics Course	562
<i>Anita Csesznák, Réka Szobonya, Budapest Business School, Hungary</i>	
The Figure of the Tutor in the BA SDE on Line: An Explorative Survey on the Vision and Perception of Students	568
<i>Beatrice Partouche, Università degli Studi Foggia-Roma Tre, Sebastina Sabrina Trasolini, Università degli Studi Roma Tre, Italy</i>	
Bridging the Gap between Education, Training and the World of Work through the DC4JOBS Project's e-Platform	576
<i>Anca Colibaba, Universitatea Gr.T.Popa Iasi, Romania/ EuroED Foundation Romania, Irina Gheorghiu, Albert Ludwigs University Freiburg, Germany, Stefan Colibaba, Universitatea Al. I. Cuza Iasi, Cintia Colibaba, Universitatea Ion Ionescu de la Brad Iasi, Claudia Elena Dinu, Universitatea Gr.T.Popa Iasi, Ovidiu Ursa, Universitatea Iuliu Hatieganu Cluj-Napoca / QUEST, Romania</i>	

The Pedagogical Exploitation of Land Art with ICT for the Cultivation of Creativity: The Case of ActionBound (Augmented Reality Application).....	584
<i>Alexia Spanoudaki, University of Crete, Greece, Alexandros Stavrianos, Anglia Ruskin University, United Kingdom</i>	
Improvement of Grants Support Process in Schools	590
<i>Martina Tomičić Furjan, Igor Pihir, Faculty of Organization and Informatics, University of Zagreb, Croatia</i>	
Learning & Social Network at the University of Crete (ELearning LAB)	598
<i>Panagiotis Anastasiades, University of Crete, Department of Education – eLearning Lab, Greece</i>	
An Analysis of Content and Policies in Computer Science Education in United States	606
<i>Dorian Stoilescu, Western Sydney University, School of Education, Australia</i>	
“Connecting Schools” Project: Working for an Inclusive Learning Network.....	611
<i>Sonia Camara, Airea-elearning, Itziar Kerexeta, University of Basque Country, Spain</i>	
Results of Advanced Statistics Education for Economists on B.Sc Course.....	616
<i>Éva Sándorné Kriszt, Anita Csesznák, Réka Szobonya, Budapest Business School, Hungary</i>	
Development Opportunities for Labour Market Competences at the Base of Higher Education.....	622
<i>Katalin Nagy, György Molnár, Budapest University of Technology and Economics, Department of Technical Pedagogy, Hungary</i>	
Facilitating Young People’s Induction into the World of Work through the WWW Online Apprenticeship Simulator	624
<i>Anca Colibaba, Universitatea Gr.T. Popa Iasi / EuroED Foundation, Stefan Colibaba, Universitatea Al. I. Cuza Iasi, Romania, Anais Colibaba, Trinity College Dublin, Ireland, Rodica Gardikiotis, Universitatea Gr.T. Popa Iasi, Ovidiu Ursa, Universitatea Iuliu Hatieganu Cluj-Napoca / QUEST, Romania</i>	
EMEMITALIA 2018 – WIDENING LEARNING HORIZONS	
Le Interazioni tra Docenti nei Social Network: Un Caso di Studio sui Gruppi Chiusi di Facebook	635
<i>Francesca Zanon, Denise Benvenuto, Università degli Studi di Udine, Italia</i>	
Digital Learning for Both Self-Directed and Cooperative Learning in Lifelong Learning.....	645
<i>Beatrice Ruini, Università di Modena e Reggio Emilia, Italy</i>	
Esperienze di Didattica Universitaria Attraverso una piattaforma Video: La Prospettiva del Docente e le Proposte di Student Engagement	653
<i>Cinzia Ferranti, Cecilia Dal Bon, Marco Toffanin, Università degli Studi di Padova, Italia</i>	
A Multiple Approach to Support International Collaboration on MOOC Design: The Experience of Tomorrow’s Land MOOC.....	663
<i>Valeria Baudo, Daniela Casiraghi, Alessandra Tomasini, Susanna Sancassani, Politecnico di Milano – METID, Italy</i>	
I MOOC per L’alta Formazione: I Master su EduOpen Attivati dall’Università di Modena e Reggio Emilia	673
<i>Annamaria De Santis, Katia Sannicandro, Bojan Fazlagic, Claudia Bellini, Cinzia Tedeschi, Tommaso Minerva, Università degli Studi di Modena e Reggio Emilia, Italia</i>	
Esperienze Formative e Prodotti Innovativi Presso l’Università degli Studi di Pavia nel Quadro Strategico Europeo ET 2020.....	681
<i>Elena Caldirola, Rosalia Palumbo, Annalisa Golfredi, Enrica Crivelli, Daniela Boggiani, Donata Locatelli, Università degli Studi di Pavia, Italia</i>	

Sistemi e Software Open Source Nella Formazione Degli Insegnanti per Una Scuola Senza Esclusi.....	691
<i>Muio Pierluigi, Università della Calabria, Italia</i>	
ZenBOT – Agente per il Supporto delle Attività Formative in Ambiente Moodle.....	701
<i>Andrea Zappi, Roberto Beccari, Green Team Società Cooperativa, Italia</i>	
Comprensione Testuale e Successo Accademico degli Studenti a Distanza.....	709
<i>Luciano Di Mele, Gianluigi Cosi, Uninettuno University, Italia</i>	
Teaching Digital Skills to Future Teachers: A Blended-Learning Workshop Experience.....	718
<i>Floriana Falcinelli, Elisa Nini, Università degli Studi di Perugia, Italy</i>	
Innovazione e ICT Nell’insegnamento di Informatica del Corso di Laurea in Medicina e Chirurgia.....	726
<i>Maria Renza Guelfi, Marco Masoni, Jonida Shtylla, Dipartimento di Medicina Sperimentale e Clinica Università di Firenze, Andreas R. Formiconi, Dipartimento di Statistica, Informatica, Applicazioni 'G. Parenti', Università di Firenze, Italia</i>	
Valutazione e Certificazione Delle Competenze Negli Ambienti di Apprendimento Digitali.....	735
<i>Luciano Cecconi, Università degli Studi di Modena e Reggio Emilia, Italia</i>	
MLTV, Rendere L’apprendimento e il Pensiero Visibili Nella Scuola Secondaria di Secondo Grado	745
<i>Silvia Panzavolta, Elena Mosa, Chiara Laici, Maria Guida, Letizia Cinganotto, INDIRE, Italia</i>	
Teachers’ Digital Culture: The Horizon of Italian Participants in a TFA Course	755
<i>Fedela Feldia Loperfido, Katia Caposeno, Anna Dipace, Alessia Scarinci, Università di Foggia, Italy, Jarmo Viteli, University of Tampere, Finland</i>	
Promuovere L’innovazione Didattica e lo Sviluppo Professionale Della Docenza Universitaria: Primi Risultati Dello Sportello E-Learning Dell’università’ di Firenze	761
<i>Marcantonio Catelani, Presidente Servizi Informatici Ateneo Fiorentino (SIAF), Andreas Robert Formiconi, Delegato del Rettore all’e-learning, Università di Firenze, Maria Ranieri, Dipartimento di Scienze della Formazione e Psicologia, Università di Firenze, Francesca Pezzati, Università di Firenze SIAF, Italia, Juliana Elisa Raffaghelli, Universitat Oberta de Catalunya, Spagna, Isabella Bruni, Università di Firenze SIAF, Italia</i>	
Online Tutoring to Enhance University Success.....	771
<i>Alice Barana, Cecilia Fissore, Marina Marchisio, Sergio Rabellino, University of Turin, Italy</i>	
Disegnare L’apprendimento: Un Modello Dinamico per Pianificare Percorsi dal Micro- al Meso- al Macro-Learning	780
<i>Flavia Giannoli, Docente formatore MIUR, Italia</i>	
Innovazione della Formazione: Il Modello di e-Learning Adottato dall’Esercito Italiano	790
<i>Marina Marchisio, Sergio Rabellino, Università di Torino, Enrico Spinello, Gianluca Torbidone, Comando per la Formazione e Scuola di Applicazione dell’Esercito, Italia</i>	
Mettere a Sistema L’apprendimento Differenziato: Il Caso Dell’ic Mariti di Fauglia.....	800
<i>M. Pieri, M. E. Cigognini, INDIRE – Torino – Firenze – Italia</i>	
Le Percezioni degli Studenti Universitari Sulle Fake-News: Una Sperimentazione Formativa ed Educativa	809
<i>Corrado Petrucco, Cinzia Ferranti, Università degli studi di Padova, Italia</i>	
Didattica per Competenze: Azioni e Figure Nella Formazione Universitaria.....	817
<i>Claudia Bellini, Annamaria De Santis, Katia Sannicandro, Tommaso Minerva, Luciano Cecconi, Università degli Studi di Modena e Reggio Emilia, Italia</i>	

Competenze Critiche e Riflessive in un Corso Universitario Blended	826
<i>Nadia Sansone, Donatella Cesareni, Ilaria Bortolotti, Università di Roma La Sapienza, Italia</i>	
Attivazione, Erogazione e Monitoraggio dei Corsi di Laurea Blended dell'Università degli Studi di Modena e Reggio Emilia	834
<i>Katia Sannicandro, Annamaria De Santis, Bojan Fazlagic, Claudia Bellini, Cinzia Tedeschi, Tommaso Minerva, Università degli Studi di Modena e Reggio Emilia, Italia</i>	
Mappe Dinamiche per "Navigare la Conoscenza"	843
<i>Antonio Marzano, Sergio Miranda, DISUFF, Dipartimento di Scienze Umane Filosofiche e della Formazione, Università degli Studi di Salerno, Italia</i>	
Formazione dei Futuri Insegnanti e Tecnologie: Atteggiamenti e Percezioni di Apprendimento in un Percorso Blended Basato sull'Approccio Trialogico	857
<i>Nadia Sansone, Donatella Cesareni, Federica Micale; Università La Sapienza, Roma, Italia</i>	
Scenari del Lavoro, Futuro e Formazione 4.0	865
<i>Prof. Giuditta Alessandrini, Dipartimento di Scienze della Formazione, Università degli Studi di Roma Tre, Italia</i>	
Il Ruolo dei Gestì Significativi del Docente nei Video Multimediali per l'Educazione	871
<i>Riccardo Fattorini, Gisella Paoletti, Università degli Studi di Trieste, Italia</i>	
Imparare ad Insegnare il Pensiero Computazionale: Un'esperienza di Vera Alternanza Scuola-Lavoro Presso L'universita' di Genova	878
<i>A. Barla, B. Catania, M. Chessa, G. Delzanno, G. Guerrini, V. Mascardi, N. Noceti, F. Odone, M. Ribaudò, DIBRIS, Università di Genova, Italia</i>	
Gli Open Learners di EduOpen: Numeri e Prospettive	887
<i>Annamaria De Santis, Katia Sannicandro, Bojan Fazlagic, Claudia Bellini, Cinzia Tedeschi, Tommaso Minerva, Università degli Studi di Modena e Reggio Emilia, Italia</i>	
Developing Competence Assessment Systems in e-Learning Communities	895
<i>Alice Barana, Luigi Di Caro, Michele Fioravera, Francesco Floris, Marina Marchisio, Sergio Rabellino, University of Turin, Italy</i>	
Un Significativo Isomorfismo la "Classe Di Bayes" Tra Teoria Pratica	905
<i>Paolo Maria Ferri, Stefano Moriggi, Università degli Studi Milano Bicocca, Italia</i>	
Il Numero 0 del Primo Giornale Online Della Cattedra Unesco in "Antropologia Della Salute. Biosfera e Sistemi di Cura"	914
<i>Anna Siri, Antonio Guerci, Università degli Studi di Genova, Donatella Gennai, Istituto Comprensivo Cogoleto, Mauro Carosio, Marina Rui, Università degli Studi di Genova, Italia</i>	

QUALITATIVE LEARNING ANALYTICS TO UNDERSTAND THE STUDENTS' SENTIMENTS AND EMOTIONAL PRESENCE IN EDUOPEN

Fedela Feldia Loperfido, Anna Dipace, Alessia Scarinci, University of Foggia, Italy

Summary

What emotional experience can students live in digital mediated learning processes? In this paper we connect Learning analytics and Grounded theory to analyse the emotional presence of students in 11 courses within EduOpen (www.eduopen.org) MOOCs' platform. Namely, we analysed through a bottom up process and Nvivo 11 Plus software the forum dedicated to the students' self-presentation from all of the courses. By going ahead with the analysis, we defined a set of categories composed by a three-levels system. At a more general level we have the macro-dimensions "Sentiment about EduOpen" and "Emotions toward topics". Each of these dimensions is composed by a number of child" categories and subcategories (which are the nodes to Nvivo's language). After defining the entire set of categories and categorizing all the texts (which was a circular process), we run some graphs on Nvivo showing the hierarchical structure of dimensions, the relations among dimensions and sources, and the clusters of dimensions by coding similarity. Results show how some courses are more composed by negative or positive sentiments (both toward the topic or the logistic arrangement of the course) and how the motivations dimension heavily characterizes the broad emotional dimension of students. In an evidence based action-research perspective, these results give interesting suggestions to personalize the learning activities proposed to students by EduOpen.

Theoretical framework

This contribution connects three different fields: the area of learning analytics, the area of education specifically interested in digital mediated learning processes, and the approaches focused on the emotional dimension in learning. Namely, learning analytics is the measurement, collection, analysis and reporting of data about students and the contexts they learn through. The aim of learning analytics is to understand, personalize and optimize learning and the environments in which it occurs. Learning analytics are mainly used in learning contexts mediated by the use of digital environments, since they can produce an amount of data about the traces each student or entire groups of learners leave online, successful activities, difficult experiences, and so on (Rienties & Rivers, 2014). In relation to the field of learning analytics, we stress the emotional dimension of learning as well. Speaking about feelings and emotions from a general and classical perspective, we can think that human beings can feel universal emotions, such as anger, disgust, fear, happiness, sadness, and surprise (Ekman, 1999) or joy-sadness, anger-fear, trust-distrust and surprise-anticipation (Plutchik, 2013). However,

we can refer to emotion and, specifically, to emotions and learning, after answering the question “How can we define and understand emotions at a more specific level?”. According to Zembylas (2008), there is no agreement about what an emotion is and is characterized by. Indeed, emotions can be understood at least through three different perspectives: (a) Emotions as private and belonging to an intimate experience, as defined by psychodynamic approaches; (b) Emotions as sociocultural phenomena, as understood by social constructionist approaches; (c) Emotions as described by interactionist approaches, which transcend the dichotomies (e.g. mind/body, individual/social) established in the previous two and aims at bridging their differences. However, even if there is no a common definition of emotions, authors claim that they are not separated from the learning context (Lehman, 2006; Lipman, 1991). Coherently to this, for example, communities of inquiry (Garrison, Anderson, & Archer, 2000) are digital mediated learning experiences characterized by the cognitive presence, the social presence, the teaching presence and the emotional presence (Cleveland-Innes, & Campbell., 2012). This last is understood as the “emotional expression part of being socially present online” (p.272). If we still stay at this general layer, we can connect the interesting about the emotional dimension and the learning analytics by referring to Sentimental analysis, also known as Opinion mining looking for both negative and positive sentiments people have about the digital environment they use. However, this connection does not suggest how we can understand emotions at a more specific level. As for this point, Cleveland-Innes and Campbel (2012) approach the emotional experience of students through Grounded theory, that is by doing a content analysis of texts, looking for contents about emotions and defining a grid of categories through a bottom up process (from the text to the categories).

In this contribution, we connect both learning analytics and grounded theory to analyse the emotional experience of students in an online learning context made by eleven courses. This integrated system allows us exploring sentimental and emotional dimensions at macro-, meso- and micro-levels of the context. At the same time, we also created a three-levels set of categories for the emotional analysis, composed by general dimensions, more specific categories and further subcategories.

Aims

- To explore the emotional processes experienced by students during the participation in MOOCs proposed by EduOpen.
- To personalize the learning activities, according to students' emotional experience.

Context and data

This research is supported by Unifg Tutoring – UniTutor project and the context of analysis is EduOpen, an international Moodle platform lead by the University of Foggia (IT). We can better describe the context by referring to the macro-, meso- and micro-levels composing it. At a macro level, EduOpen is realized by 17 Italian Universities and several foreign partnerships. It started in 2014 and is an action-research project periodically rearranged thanks to evidence-based methods. Until now, it involved more than 70,300 learners from all over the world and

Qualitative Learning Analytics to Understand the Students' Sentiments and Emotional Presence in EduOpen

Fedela Feldia Loperfido et al.

proposed 140 courses. Indeed, the activities of EduOpen are online courses loaded on the Moodle based platform. Through a micro perspective, we can describe that each course refers to a specific topic (e.g. math for beginners, animals, English, and so on), and is managed by a university teacher and an online tutor of the EduOpen team. Furthermore, at the end of a course, students receive a participation certification, an open badge or ECTS. More specifically, each course spends three-five weeks and is composed by:

- A self-presentation forum where students usually write down a post about themselves, the place they live, the wishes and expectations they have about the course, and so on;
- A number of MOOCs videotaped by the teacher and related to the topic of the course;
- Another forum where students can ask further explanations to the teacher;
- An evaluation section, where students fill in online tests during or at the end of the course.

At a meso-level, we can say that all of the courses are categorized in different fields (such as, Literature, Science, and so on), in several pathways (an ensemble of courses connected each other by a main theme) and/or in the catalogue that a specific University partner proposes. In this paper, data are characterized by the self-presentation forums of all the courses managed by the University of Foggia (IT). These are 11 courses and have involved 43345 students in total (10,277 of them completed the course they were unrolled in). Therefore, we especially look at the micro-level of each course and at the meso-level of the group of courses proposed by the University of Foggia.

Method of analysis

According to both Grounded Theory and Sentiment analysis approach, we:

1. Created a first general grid of analysis, composed by the two general dimensions “Positive sentiments” and “Negative sentiments” referred to the learning experience in the digital context;
2. Categorization of the texts through qualitative content analysis (Mayring, 1997), by using Nvivo 11 Plus;
3. Generation of further dimensions and their specific categories, emerging from the interaction between grounded approach and theoretical concepts;
4. Team discussion about the building of the grid and the categorization;
5. Checking of the categorization according the team discussion;
6. Analysis of the nodes (the categories to the software) by using Nvivo 11 Plus.

Results

During the analysis, we realized that the first version of the grid needed to be much more enriched. Therefore, we created a double grid, able to grasp three levels of the students' emotional experience in the University of Foggia EduOpen courses. In other words, we defined two general dimensions: (a) “Sentiment about EduOpen”, grasping what students felt about

EduOpen, its services and the arrangement of the courses; (b) “Emotions toward topic”, observing the feelings about the topic of the specific course students participated in. That is, the first dimension is about the feelings toward the digital environment, the concept of EduOpen, the arrangement of the environment. The second one refers to the feelings about the topic of the specific course. Furthermore, as Figure 1 and Figure 2 show, the category “Sentiment analysis” is composed by two more specific categories: “Negative sentiments” and “Positive sentiments”. These, in turn, are composed by other two subcategories for each (moderately/very negative; moderately/very positive). The figure shows the hierarchical relation among “parents” categories and “child” ones too, as elaborated through Nvivo.

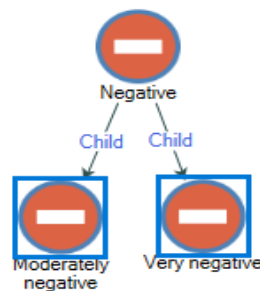


Figure 1. Negative sentiments to EduOpen child graph.

Negative sentiments have the two children nodes “Moderately negative” and “Very negative”

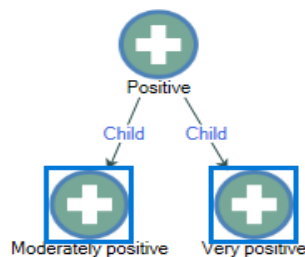


Figure 2. Positive sentiments to EduOpen child graph.

Positive sentiments have the two children nodes “Moderately positive” and “Very positive”

The dimension “Emotions to topic” was at the end shaped by a complex structure of categories. At a middle level, we grasped the three categories “Motivations”, “Negative sentiments” and “Positive sentiments” (not to be confused with the two namesake categories “Positive” and “Negative sentiments” about the digital experience in EduOpen already described). “Motivations” refers to a category exploring a more cognitive dimension, even implying the students’ expectations about the contents of the course and the reason why they are going to attend the course. Indeed, it is composed by seven specific or “child” categories. “Negative sentiments” is about the feelings students have against the content of the course and is composed by five specific or “child” categories. “Positive sentiments” is about the good feelings students have toward the content proposed by the course and is shaped by five specific or “child” categories. In Table 1, we describe all the categories composing “Emotions to topic” (a graph like Figure 1 and 2 would be more impressive, but we think the table is more effective).

Qualitative Learning Analytics to Understand the Students' Sentiments and Emotional Presence in EduOpen

Fedela Feldia Loperfido et al.

Table 1: Macro-, meso- and micro-level categories of "Emotions to topic"

Macro level category	Meso level category	Micro level category (and eventual description)
Emotions to topic	Motivations	Deepen knowledge (to go in depth in the topic the course refers to)
		Home learning (participate because you can attend the course staying at home)
		Innovative methods (to be tried)
		Mind training
		Old knowledge renewal
		Practical effects (in daily job activities)
		Support to learning (of other contemporary learning experiences)
	Negative sentiments	Disorientation
		Fear
		Feeling in trouble
	Positive sentiments	Nostalgia (about past learning experiences on the same topic)
		Sense of unfinished
Discovery and curiosity		
Enthusiasm		
Feel interest		
		Hope (to better understand the contents in opposition to past experiences)
		Passion

After creating the final grid of analysis by making the categorization, we checked them (the grid and the first categorization) by a team discussion, until we reached a total agreement about both. At the end, we analysed the nodes and their relationships with the sources (the texts of the forum) by elaborating some graphs through Nvivo 11 Plus. The following graphs (Figure 3, 4, 5, 6) and their respective descriptions show the analysis we made, which we will go back to in the conclusions as well. Figure 3 suggests that, in the general dimension "Sentiment to EduOpen", the category "Positive sentiments" is much more prominent than the which one about negative sentiments. Furthermore, the moderately positive sentiments are more present in the texts than the high positive ones. Figure 4, instead, shows what are the relations between nodes and sources. As it is visible, in eight forums referring to the respecting courses (Biochemical pills, Math for absolute beginners, Law history and philosophy, Animals, Knowing History, History of Italian literature, Course of general mathematics, Tourism marketing through digital media) students express both positive and negative sentiments about the structure of the course and/or EduOpen as a learning experience. Furthermore, in the document of "Pedagogy and education, basic concept" course there are just positive sentiments' references; whereas, in the course about Physics and Basic general pathology there are no sentiment expressions.

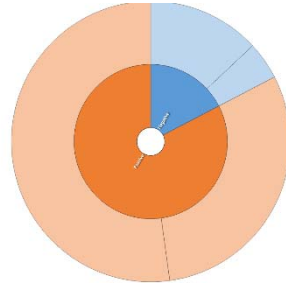


Figure 3. "Sentiment to EduOpen" hierarchical graph.

Dark orange section represents Positive sentiments in total, whereas the dark blue one represents Negative sentiments. The smallest light orange section is about the highly positive sentiments; the smallest light blue sections is about the highly negative sentiments.

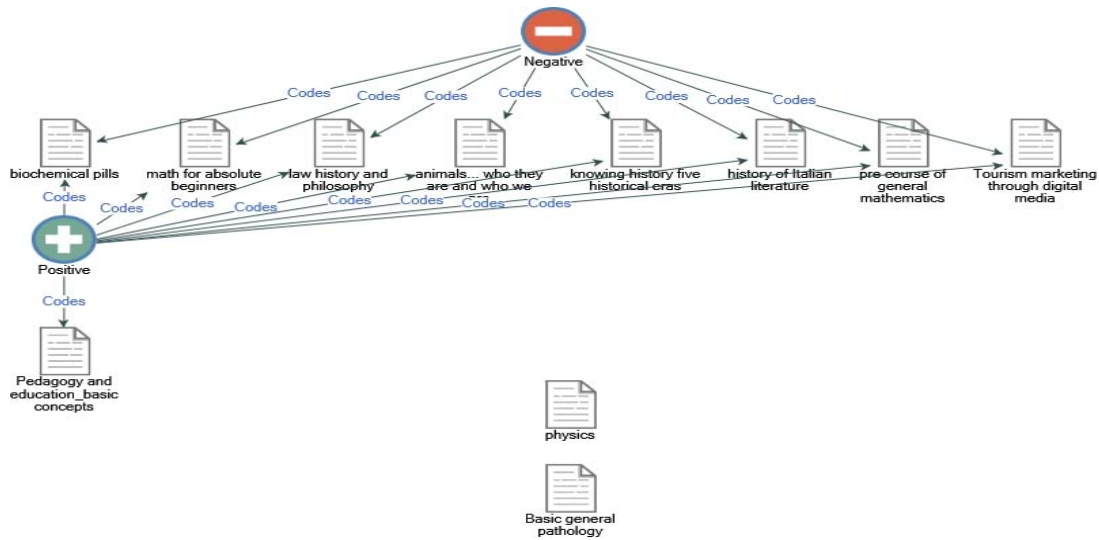


Figure 4. "Sentiment to EduOpen - sources" project map.

The red circle represents Negative sentiments; the green circle represents Positive sentiments. Arrows show the relation between each dimension and the forum of the specific course, that is if there are coded units of the text by using the dimensions.

What about the macro-dimension "Emotions to topic"? Figure 5 shows that the "Motivation" meso-category is the richest one, followed by "Positive sentiments" and then by "Negative sentiments", suggesting that the more cognitive aspects have a higher incidence in the texts.

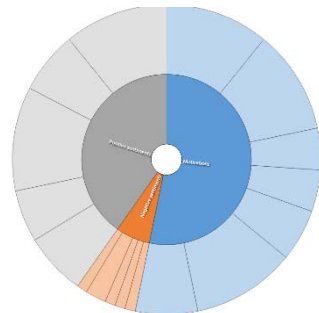


Figure 5. "Emotions to topic" hierarchical graph.

The blue section is about Motivations, the grey section is about Positive sentiments and the orange section is about negative sentiments toward the topic.

Qualitative Learning Analytics to Understand the Students' Sentiments and Emotional Presence in EduOpen

Fedela Feldia Loperfido et al.

Figure 6, instead, describes the connections between codes and sources. As it can be seen, the category “Motivation” is related to all of the sources, whereas the category “Positive sentiments” is used on all of the courses’ texts except than in “Physics”. Negative sentiments are involved in just three sources (Math for absolute beginners, Law History, Pedagogy and Education. Basic concepts).

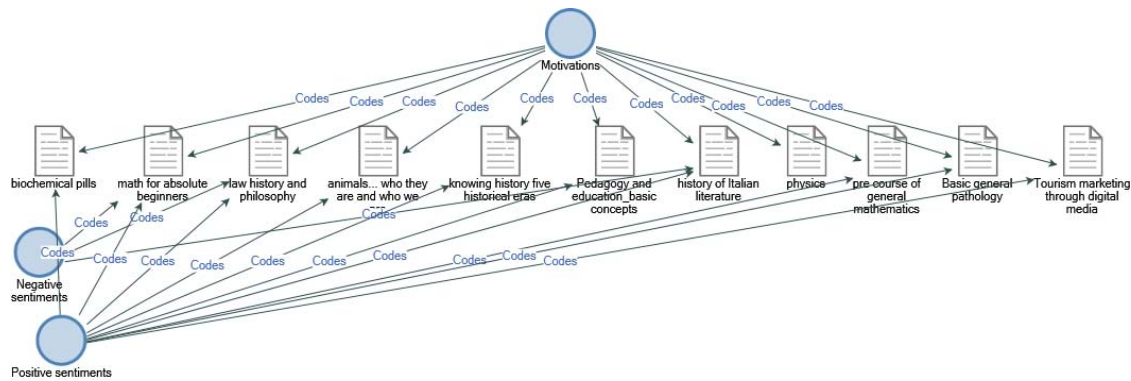


Figure 6. “Emotions to topic - sources” project map

With further analysis, the figures of them are not showed here because of the small space, we clusterized both sources and codes by coding similarity. As results, it emerged that “Motivation” and “Positive emotions” are more similar categories, and that “Physics” and “Basic genetic pathology” are the most distant sources form the others. These further results obtained by the cluster analysis mainly confirm the previous ones.

Conclusions and implications

In this contribution, we made a sentimental analysis in terms of both negative and positive opinions students have about the learning experience they are going to attend or just began on EduOpen. We also realized a more specific emotional analysis about the feelings learners have for the specific topic of the course they choose. We used a grounded theory approach to grasp the set of dimensions, categories and subcategories about emotions arising from the texts through a bottom up research process. According to the main results, the emerging set of categories is a very complex one and is composed by some clusters of similarity coding. By looking at the hierarchical graph about sentimental analysis, we can see that in general positive sentiments characterize the learners’ perception about the experience in EduOpen. At the same time, the meso-dimension “Motivations” has a prominent space in the hierarchical graph about the emotions connected to the topic of the course. By going in depth in the categories, there emerges that some of them are about intrinsic motivations (e.g. to deepen the student’s knowledge) and others are about external ones (e.g. To have a support for the university exams). However, cluster analysis shows that this last category is quite similar to category “Positive feelings” in terms of coding similarity. It seems, therefore, that students attending the courses have different motivations to participate in them, but they also feel positive emotions related to such a participation. Particularly interesting are the courses “Pedagogy and education” and “Physics”. The first one, indeed, does not have negative references in the dimension “Sentiment analysis”, whereas the second one is coded just by using the category “Motivation”.

Furthermore, there are three courses having references about negative sentiments related to the topic. We find all these results very much interesting for different reasons. Far from generalize a so specific study, we do claim that the entire set of categories shows how complex is the emotional experience of students. This is not just due to the number of categories shaping the set, but also to the three levels characterizing it, the relationships among them and the contextualized value they have in the different educational experiences. These results can have implications in the arrangement of the activities and in the personalization of the learning process, since an organization taking care of the specific emotions students feel can make the learning aims more effective. At the same time, further more specific analysis can give justice to the complexity of the students' emotional presence. Indeed, next studies will analyse the possible statistical correlation in the relations codes-dimensions and codes-sources, and the direction of such relations. Furthermore, we will analyse the forums of other EduOpen courses in order to broaden the study to the macro entire context of EduOpen, and to create methodological tools connecting the usual learning analytics' quantitative perspective and the qualitative dimension shaping the emotional experience of students.

References

1. Cleveland-Innes, M., & Campbell, P. (2012). Emotional Presence, Learning, and the Online Learning Environment. *The international Review of Research in Open and Distance Learning*, 13(4), 269-292.
2. Ekman, P. (1999). Basic Emotions. In T. Dalgleish, & M. Power (Eds.), *Handbook of Cognition and Emotion* (pp. 45-60). SF: John Wiley & Sons Ltd.
3. Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2, 1-19.
4. Lehman, R. (2006). The role of emotion in creating instructor and learner presence in the distance education experience. *Journal of Cognitive Affective Learning*, 2(2), pp. 12- 26.
5. Lipman, M. (1991). *Thinking in education*. Cambridge: Cambridge University Press.
6. Mayring, P. (1997). *Qualitative Inhaltsanalyse*. Weinheim: Deutscher Studien Verlag.
7. Plutchik, R. (2013). Emotion: Theory, research, and experience. In R. Plutchik & H. Kellerman (Eds.), *Theories of Emotion* (pp. 10-24). New York: academic Press.
8. Rienties, B., & Rivers, B. A. (2014.). Measuring and understanding learner emotions: evidence and prospects. *Learning Analytics Review*, 1, 2-30.
9. Zembylas, M. (2008). Adult learners' emotions in online learning. *Distance Education*, 29(1), 71-87.