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eCAMPUS UNIVERSITÀ

UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

Volume edited by

Gabriella Casalino and Riccardo Pecori

Book of Abstracts

HELMeTO 2020

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Message of the General Chairs of HELMeTO 2020

Dear friends,

the 2019 edition of HELMeTO confirmed a growing interest on the online higher education topics, as well as the relevance of the interdisciplinary approach that characterize our annual event. The presentations and the talks triggered an intense discussion about the complex relationship between technologies and pedagogical approaches. These reflections highlighted some topics of particular interest such as the potential role of learning analytics, the relevance of the learning design, and the key role of tutorship in online learning. While the HELMeTO steering committee was working on the 2020 edition, to be held in Bari, the Covid-19 emergency erupted and, in few weeks, online learning topics escalated in the agendas of all the education institutions around the world: schools, universities, education ministries and policy makers. On one side the emergency led us to reconsider the organization of the conference, bringing the entire organization online, on the other side it appeared to us that the unprecedented situation needed a dedicated special session within HELMeTO 2020, a session dedicated to the impact of Covid-19 emergency on online learning. The emergency has forced universities to adopt solutions for distance learning very quickly, often without being able to provide adequate planning or build up the specific technical and didactic skills to develop e-learning courses. Even the delicate aspect of the assessment, necessarily translated online too, was addressed with emergency solutions that each university has implemented on the basis of the technological resources and skills available as well as the specific nature of the degree courses. This extraordinary situation is well represented by most of the accepted contributions explicitly dedicated to the reaction of academic institution to the Covid-19 impact on their courses. Alongside these contributions there are those less linked to contingency, which address the key themes of online learning: learning analytics, online assessment, innovative teaching methodologies, roles and practices of online tutoring. We are aware of the fact that 2020 is not going to be a year as usual and all of us had to face something unexpected and unprecedented, facing the first global pandemic of the digital era, but, in the end, we decided to maintain the HELMeTO 2020 edition as a virtual workshop and place of discussion, with a special focus on the unexpected diffusion of online learning far beyond its usual reference domain. We received 59 extended abstract submissions from more than 170 authors and 13 countries (Spain, Indonesia, Russia, Japan, Norway, Canada, United Kingdom, Hungary, Yemen, Netherlands, Greece, Oman, Italy), after the peer review 40 contributions were accepted to the workshop.

September 17, 2020
Bari

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Bridges and Mediation in Higher Distance Education. HELMeTO 2020 Editorial: Introduction to the Scientific Contributions

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Keywords: Distance Learning, Higher Education, Technology-Enhanced Learning, Digital Learning, Online Education, eLearning, Covid-19

Covid-19 shook and is still shaking the whole world in a short period like globalization and the establishment of the worldwide Internet did over decades impacting all sectors, branches and levels of the society including formal school and higher education and leading to our *digital age* [1–4]. This impact is unique in the formal education during the last decades and led to many ad-hoc decisions and changes. Most educators and learning providers were not prepared and forced to move to distance education. Schools and universities had to be closed so that there was no alternative than establishing new forms of education. Technology-enhanced learning, now called e-Learning again as in its beginning in the 1990s, was considered as a potential solution but all parties (learners, educators, learning providers, educational systems and ministries) were lacking expertise, infrastructure and equipment. The situation was similar to the 1990s when e-text, e-learning, e-commerce, and e-governance were introduced. That is why these years can also be labeled as the *electronic* decade [5], while the following decade saw the rise and collapse of the e-Learning hype. Therefore, the 2000s are called the 'open' decade [6] as they introduced open source, open systems, open standards, open archives, and *open everything* supported by the Forum on the Impact of Open Courseware by UNESCO in 2002 [7]. Online collaboration, communities and courses were enabled thanks to Web 2.0 and social media, including the first Massive Open Online Course (MOOC) in 2008 [8, 9]. In the 2010s, e-Learning became mature, in particular in enterprises and their vo-

cational training. However, the focus was often on the technology and on simple transfer of face-to-face learning and paper-based materials in digital environments. Thus, innovative methodologies and specific pedagogical approaches in online learning were demanded under the umbrella term Open Education that was influencing policies, methodologies and practices [6, 9]. First milestones were the Paris OER Declaration by UNESCO (2012) [10] and the Opening up Education initiative by the European Commission (2013) [11]. As a consequence, open learning approaches was entering official curricula in school and higher education [6]. Combined with innovative learning design and strategy, e-Learning has got the potential to achieve broad and long-term impact, to improve the educational quality and to support United Nations' sustainable development goals for our better future and society [12].

The outbreak of Covid-19 has demonstrated the still existing challenges for implementing e-Learning at large scale, also in Higher Education. HELMeTO 2020 is facing similar challenges as it has to be converted into a complete online event. Thus, the international workshop is reflecting it in its title "Bridges and Mediation in Higher Distance Education" as well as in its program: a special call for Covid-19-related papers led to a record of submissions dealing with the specific demands, current and potential solutions in (higher) education through e-Learning.

In the following, we briefly summarize the contributions accepted for the oral presentation in HELMeTO 2020. In the first section, we summarize the contributions in the field of methodologies for e-Learning. Then, in the second section, we focus on the works dealing with technologies for eLearning. Finally, in the last section, we briefly discuss the papers collected and accepted for the special track on Facing Covid-19 Emergency in Higher Education Teaching and Learning. Each contribution is cited specifying the surname of the first author. In the following chapters of this volume, each contribution is presented in the order in which it appears in this brief editorial.

Methodologies for eLearning

Online higher education offers several topics for further study, both theoretical and empirical, in the specific context of the methodologies, assumed as the 'backbone' of any educational intervention activity. In this workshop, we accepted 14 contributions under the umbrella of methodologies for e-Learning. We divided them into two main sessions, namely "Online learning pedagogical frameworks: models, perspectives and application" and "Online learning strategies and resources: e-tutoring, communities, webinar and tools".

Online Learning Pedagogical Frameworks: Models, Perspectives and Application

The work of Frisch et al., within the IDEKI network, proposes the construct of a 'collective intelligence' to reflect on hybrid modes of online professional

development. Valeeva and Sabinova's proposal illustrates how a simulator was used as a part of an e-learning course to train future teachers to develop children's visual memory at the Federal University of Kazan. The study conducted with the multiple-case approach, described by Panciroli et al, analyzes the blended model created at a university course and two undergraduate's laboratories at the University of Bologna. Toto and Limone investigate through the UTAUT (Unified Theory of Acceptance and Use of Technology) questionnaire the degree and forms of acceptance of technologies by teachers involved in online courses. The work of Piccino investigates the forms of reasoning that can be developed in students in an online environment, real and virtual, through narrative and paradigmatic thinking. Quintas-Hijós and Latre-Navarro describe an exploratory analysis of an e-learning course to support future primary school teachers for the drafting of the Final Degree Project at the University of Zaragoza. Maiolo et al. present the validation of the Italian version of the CATCS as a predictor of academic dropout.

Online Learning Strategies and Resources: E-tutoring, Communities, Webinar and Tools

Raviolo et al. provide a map of the specific activities of e-tutoring in eCampus Telematic University, focusing on online tutors (TOLs) and disciplinary tutors (TDs). The work of Ferrari and Triacca describes the strategic role of the e-tutor in building the online community investigated through qualitative and quantitative methods on 9 degree courses at the 'Sacred Heart' University of Milan. Stebbings et al. investigate the function of webinars in the progression of student learning as regards a distance learning course at Manchester Metropolitan University. The work of Ebere et al. analyzes statistically the impact of the distance learning modality of the under-graduated introductory course in Biology on student learning. Cecchinato reflects on the effects that the Perusall, a tool of 'social annotation' developed by the Harvard University, has on the learning processes of university students. The proposal of Di Tore et al. presents a systematic review of Italian studies, based on the PRISMA paradigm, regarding learning assessment in higher education. The work of De Giuseppe et al. presents an inclusive training model in blended mode for the development of active citizenship skills, called Education for Sustainable Development (ESD).

Information Technology for eLearning

IT technologies play an important role for supporting different aspects and dimensions of distance learning in higher education. In this workshop, we accepted 11 contributions under the umbrella of learning technologies. We divided them into two main sessions, namely "The challenge of implementing emerging technology solution for online learning" and "Online learning technologies in practice".

The Challenge of Implementing Emerging Technology Solution for Online Learning

As regards the paper of the first session, Casalino et al. discuss the importance of taking into consideration, when building education data mining models, the streaming aspects related with digital footprints, which each student continuously generates while interacting with virtual learning environments. De Carolis et al. present the preliminary results achieved by a computer vision module that recognizes facial expressions associated with emotions, which typically arise during a distance learning process. Eradze et al. carry out a statistical analysis for assessing the educational values of videos. The analysis is performed considering feedback provided by the students after each video class. Umezawa et al. proposes a method to assess the attention degree of students considering the time spent on a browser and the analysis of their electroencephalogram. The authors carried out an experiment to test the proposed method, which included two groups of students who learn the C and Scratch languages, respectively. The work of Robert et al. introduces a Virtual Reality application for learning in Artificial Intelligence education. The application has been experimented in a real context for introducing pupils to neural networks and the gradient descent algorithm.

Online Learning Technologies in Practice

Regarding the second session, Ardimento and Scalera discuss the results of comparing flipped Learning and traditional learning in a Object-oriented Programming course at the University of Bari. They actually divided their classroom into two groups that experimented the two different learning approaches. Ducange and Raviolo argue on the experience, at the University of Pisa, of teaching Emerging Paradigms and Technologies. Specifically, authors discuss the adopted Problem-Based Approach, in a Soft-Blended Environment, for teaching a course entitled Large Scale and Multi-Structured Databases. Further, Cisternino et al., discuss another teaching experience at the University of Pisa. Specifically, authors exploited a Cloud-based virtual lab for allowing students to carry out practical activities in the framework of Cloud Computing and Distributed Databases courses. Fazzolari et al. describe a nation-wide initiative for the implementation of online teacher training courses and materials on Digital Culture. The main aim of the initiative is to enhance and to make more accessible distance learning at every level of education. Finally, Barpi et al. share their experience in participating in the EduHackathon, a collaborative part of a course called EduHack. The course was organized by the Politecnico di Torino, as part of an Erasums+ project. The aim of the course was to stimulate teachers to improve their skills for the creation of e-learning course and digital resources.

Facing COVID19 Emergency in Higher Education Teaching and Learning

The Covid-19 pandemic has heavily impacted the world of higher education. If online universities were somehow prepared for this unfortunate situation, traditional universities paid the highest price in seeing themselves basically converging towards distance learning in no time. On the other hand, the pandemic emergency has clearly boosted theories and practices of distance learning in higher education. HELMeTO 2020 launched a call for papers reserved for a Covid-19 special track, and the impressive amount of papers received for this special track proves both the successful effort made by traditional courses in turning online and the response of the higher educational research community in defining frameworks and models for distance learning during the pandemic. The Covid-19 special track relies on 16 accepted extended abstracts that turned into 2 parallel sessions for podium presentation. A first session pooled contributions focused on tools and practices for facing Covid-19 emergency in higher education, while a second session gathered studies aimed at providing frameworks and overviews.

Facing Covid-19 Emergency: Tools and Practices

As regards the first session, Bonavolontà et al. investigate the continuity of the educational relationship between teachers and young tennis players during lock-down as well as the levels of physical activity, enjoyment and motivation in the emergency context. On the basis of the encouraging results, they reflect on how the emergency may represent a fresh start for distance learning in sport activities. The work of Kővári and Bak aims at assessing digital competences and online social presence among university students of the University of Pannonia during Covid-19 lock-down. By means of a survey, authors have found a connection between Internet skills and online social presence, a positive correlation between age and the Internet skill, and a similar online social presence between men and women. Stimilli et al. assess the anxiety levels of students at the 5^{th} year of an Italian high schools who faced the preparation of their graduation exam during the pandemic. Iuliano et al. assess student's satisfaction in attending an online workshop specifically created to ensure didactic continuity to a Sport and Exercise Sciences university program, at eCampus University, during the lock-down, and they compare its effectiveness with respect to the traditional practice-oriented classes. Bernardo and Bontá report on the experience of the University of Urbino in facing the Covid-19 outbreak via massive distance learning and on-line exams. They also discuss the combined use of a number of software tools (Moodle, Collaborate, Smowl, Meet) to provide support for online lectures and oral and written exams. The same challenge is faced by Luciani in turning the Laboratory of Didactic Technologies of the University of L'Aquila into a fully online delivery mode. Students project works have been uploaded on a blog, and students' satisfaction and adherence to the program results to be on the same level than pre-emergency. The work of Agrati and Vinci presents the

model and the didactic-organizational solutions that have been adopted for virtual internship of the Educational Sciences university program at the 'Giustino Fortunato' University during Covid-19 lockdown. Their results suggest that webinars providing targeted e-tivities can be successfully used to simulate problem scenarios and develop process intervention skills. Similarly, moodles have been found useful in representing activities in a virtual form. Finally, students satisfaction of a Science Technology Engineering and Medicine course of the University of Bari, that unexpectedly turned online during the Covid-19 lock-down, is also the focus of the work of Dabbicco et al.

Facing Covid-19 Emergency: Frameworks and Overviews

Concerning the second Covid-19 related session, Viviana Vinci and Rosa Sgambelluri present the outcomes of an exploratory research on the effectiveness perceived by students about distance learning in University of Reggio Calabria during Covid-19 crisis, highlighting the potential of enhancing flexible learning, autonomy and the negotiating construction of knowledge. Bruschi et al. discuss the early results of a research on the advantages experienced by university teachers already involved in a specific training program on Online Open Course model at the University of Torino facing the Covid-19 emergency. Hana Ait Si Ahmad et al. present a research on the implementation of the online teaching at Cadi Ayyad University, Morocco, as a starting point for a strategic plan for the digital transformation of the University after Covid-19 emergency, highlighting six pillars that seem to be the most relevant to build the university of tomorrow. Di Tore presents an exploratory study on the remote teaching technologies used in twenty lower secondary schools in Campania (Italy) to face Covid-19 emergency. He found that opportunities include a growing interest about digital learning among students and the need for digital skills training among teachers, along with the risks of failure in adopting common technical standards and the critical adoption of models and methodologies chosen in an emergency situation without a real rethinking of the teaching approach. Fabbri et al. describe the implementation of a blended learning model in the Department of Education, humanities and intercultural communication at University of Siena (Italy). The crisis is seen as a "critical organizational incident" which triggered a process of building a new community, more reflective and able to evaluate and rethink the degree of effectiveness of its pedagogical practices. Loredana Perla et al. present an investigation aimed at identifying the main constituents of the imposed digital "metamorphosis" and the forms and formats of the hybridization introduced in educational mediation during Covid-19 crisis. They identify some indications of a profound rethinking of university didactic mediation in a hybrid digital direction that seem to be here to stay even after the returning to the normality of face-to-face teaching. Lane et al. highlights in their study the importance of a sound pedagogical approach in teaching online, discussing the emergency implementation of online learning in clinical courses in nursing and applied psychology at the Faculty of Health Disciplines, Athabasca University in Alberta, Canada.

They discuss both the underlying pedagogy of online learning and show how technology can support effectively this pedagogy.

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