

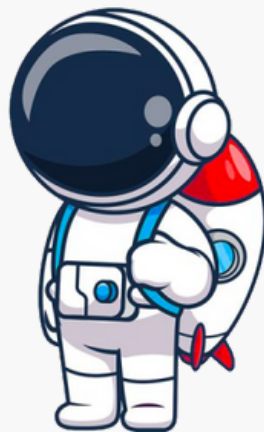


HELMETO 2023

UNIVERSITY OF FOGGIA

5th International Conference on
Higher Education Learning Methodologies and
Technologies Online

Foggia, September 13th - 15th, 2023

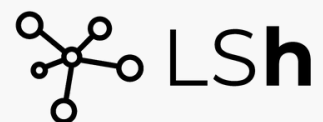


BOOK OF ABSTRACTS



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Autori vari
HELMeTO 2023 - Book of Abstracts
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Editore STUDIUM s.r.l. a socio unico
Prima edizione Settembre 2023

ISBN 978-88-99978-64-8

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The 5th International Conference on Higher Education Learning Methodologies and Technologies Online (HELMeTO2023) confirmed a growing interest in the topics of higher education learning methodologies and technologies, as well as the relevance of the interdisciplinary approach that characterizes our community.

This increased interest drove us to translate the HELMeTO event from a workshop to a conference (for the second year), hosting a higher number of contributions from several countries and bringing a more international perspective on the topics. During the presentations and talks, it became clear that there is a complex relationship between technology and pedagogical approaches. These discussions also brought up new emerging topics, such as the potential role of learning analytics, artificial intelligence, augmented and virtual reality, and big data analytics. Additionally, the importance of tutorship and learning design in online learning was emphasized.

The Department of Humanities at the University of Foggia hosted the 2023 edition of HELMeTO. This was the second in-person event since HELMeTO 2020 and 2021 were conducted fully online due to the Covid-19 pandemic. We received 108 submissions from over 313 authors and 19 countries (Algeria, Brazil, Croatia, Estonia, Germany, Italy, Japan, Latvia, Malta, Morocco, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom), thus confirming the growing interest from the scientific community in the conference and its international scope.

The 2023 edition of HELMeTO featured dozens of high-quality contributions spread across 11 special tracks and two general tracks. This volume provides an overview of the current international context of online learning. Theoretical approaches, technologies, and practical cases are covered in-depth, making it a valuable resource for scholars and researchers interested in online learning and the future of education from pedagogical and technological perspectives.

This editorial does not aim to systematically review every publication but rather provide a general overview of each track, assisting readers in deciding what to pursue further. To this extent, *General Track 1* is focused on “*Online pedagogy and learning methodologies*”. It presents how to design a survey, how to implement social learning for professional development, the outcome of using a machine-learning app on peer assessment, and the after-effects of COVID-19 in Higher Education.

General Track 2 is focused on “*Learning technologies, data analytics, and educational big data mining as well as their applications*”. It presents predictions both in course quality and in students’ success. It also presents analytics on a specific MOOC and on university data cultures, as well as a deep analysis of digital tools and the related roles.

Special Track 1 is focused on “*Smart Systems for context-aware Education*”. It aims to create a platform for discussing the latest research trends and applications of smart systems integrated with artificial intelligence approaches for context-aware education. It provides an opportunity for instructors, researchers, instructional designers, and administrators to identify and discuss new and promising research directions in this challenging field.

Special Track 2 is focused on “*Emotions and art in higher distance education*”. It aims to collect and analyze eLearning practices that focus on the role of emotions in university courses. It invites teachers and researchers to reflect on the relationship between emotions, community building, and art, and to reconstruct teaching methods and participatory mechanisms that clarify this relationship. Specifically, the track focuses on the following aspects: emotional presence in building an online learning community, aspects of interaction (such as emotional intelligence, empathy, and affect), emotional responses experienced in an e-learning environment, and the effects of emotional presence on disciplinary knowledge.

Special Track 3 is focused on “*Performing art-based methodology to improve online learning experiences*”. It aims to investigate how a specific laboratory teaching experience, which is conducted remotely and focuses on performance, can impact the perception of the empathic relationship, learner interaction/engagement, and the perception of non-verbal cues such as body language, gaze, and tone of voice. These factors are crucial to establish a meaningful teaching process that promotes participatory online learning experience, emphasizing a shift from a mere "experience-of" some object to an "experience-with" that involves active engagement and collaboration among learners.

Special Track 4 is focused on “*E-learning for providing “augmented” mathematics education at University level*”. The use of technology, especially the internet, cannot be overlooked in any aspect of modern life. In the field of education, students naturally turn to digital resources like videos, tutorials, and mathematical software. This poses a challenge for university teachers to create new learning environments that integrate both traditional and digital resources, and utilize them to enhance students' learning experiences. It is important to explore how technology can be leveraged to create new and innovative teaching methods that provide students with augmented learning experiences.

Special Track 5 is focused on “*Supercyberkids! The importance of promoting cybersecurity education among teacher education students*”. It aims to facilitate the exchange of research results, experiences, and products related to cybersecurity education in primary school settings, including teachers and parents. Its ultimate goal is to explore new ideas and trends in gamification platforms and specific games related to cybersecurity, with a focus on teacher education and professional development as a reference context.

Special Track 6 is focused on “*Effects of high-performance artificial intelligence systems and immersive technologies in education*”. It aims to discuss the impact, potential, viewpoints, merits and drawbacks of both high-performance AI systems and immersive technologies in the field of education. It includes contributions related to the impact of new AI systems on education, novel artificial intelligence systems to bolster education, the use of readily available AI systems for education from the perspective of students and teachers, supportive AI for creating XR scenarios, XR in education and teaching.

Special Track 7 is focused on “*The future of learning: Exploring the intersection of posthumanisms, e-health, technologies, and artificial intelligence in education innovations*”. This track covers new research directions in e-health education, including virtual reality, gamification, mobile health, and personalized healthcare. It also explores the challenges and opportunities of integrating e-health technologies into clinical practice and the ethical considerations of using them. Additionally, it addresses health equity and implementation of e-health education interventions in diverse settings.

Special Track 8 is focused on “*Technology-based learning interventions in higher education for combating inequalities and increase the psychological well-being of youngsters*”. The purpose of this special track is to gather reflections, best practices, and experiences related to the use of serious games and digital interventions in higher education. The goal is to ensure inclusive environments for youngsters that help improve their well-being, combat inequalities and promote psychological wellness.

Special Track 9 is focused on “*Innovative inclusive university*”. It aims to encourage discussions, sharing of best practices, and personal experiences regarding the latest teaching methodologies that promote inclusion in higher education. This track puts emphasis on the use of new technological tools that support truly inclusive teaching.

Special Track 10 is focused on “*Beyond borders: exploring immersive environments and new didactic approaches in higher education*”. The aim and scope of this track are to identify the key elements that arise from studying immersive reality in higher educational contexts. Additionally, it aims to develop innovative teaching models and approaches for higher education students and lifelong learners, while exploring theoretical and practical settings for the construction and management of knowledge. Finally, the track aims to stimulate interdisciplinary discussions on the topic.

Finally, *Special Track 11* is focused on “*Learning technologies and faculty development in the digital framework*”. It addresses two main areas of interest, namely: online or blended approaches to academic/faculty development, and how faculty development can enhance teachers' skills to design, implement, and assess learning in a higher education digital environment. The track features research, best practices, and experiences related to online or blended initiatives for faculty development, as well as papers on topics such as the promotion of academic staff profiles and skills development in the digital environment. These topics include learning design, curriculum design, teaching methodologies, assessment, digital publishing, open science, online learning, e-mentoring, e-tutoring, digital skills, and related topics.

In summary, this book of abstracts provides a comprehensive overview of the methodologies and technologies used in online learning in higher education. This has been the focus of HELMeTO since its first edition. The book brings together

theoretical concepts and practical experiences related to online technologies and learning. It is a valuable resource for anyone interested in this field.

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Toward a game-based cybersecurity training for young students: the SuperCyberKids project.*

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1 Introduction

With more and more kids having easy access to the internet, there is a rising concern about their safety while they are online. Even before the rapid increase in remote schooling caused by the COVID-19 epidemic, children were already spending significant time online. However, providing effective cybersecurity education to young learners presents significant challenges for educators, from the lack of necessary knowledge and tools to the difficulty in maintaining student engagement [1]. The SuperCyberKids project, co-founded by the Erasmus+ Programme of the European Union, seeks to address this issue by providing educators with the resources and strategies necessary for implementing digital game-based learning.

2 The SuperCyberKids Project

SuperCyberKids harnesses the diverse expertise of numerous partners, each contributing their unique experience in the three major domains involved in the project: digital education for teachers and schoolchildren, game-based learning and cybersecurity. The partnership covers five EU countries (Italy, Estonia, Germany, Belgium and the Netherlands) and includes: three academic and research partners (National Research Council of Italy, Tallinn University and the University of Mannheim); one expert on Cybersecurity (ECSSO, European

* Co-founded by the Erasmus+ Programme of the European Union - Project No. 101087250 - ERASMUS-EDU-2022-PI-FORWARD.

Cyber Security Organisation); two learning, games and IT solutions designers/developers (Grifo Multimedia and CGI Eesti AS); one association representing school heads (ESHA, European School Heads Association). SuperCyberKids will support teacher education in cybersecurity through a gamification platform. This platform is envisioned to help teachers design, deliver, and monitor game-based learning activities for students aged 8–13. The creation of this platform will involve adapting an existing product, provided by the partner Grifo Multimedia.

2.1 The SuperCyberKids Learning Framework

Central to the gamification platform is the SuperCyberKids Learning Framework (SCKLF), the first key deliverable produced in the project. Its aim is to scaffold teachers in generating personalized learning paths, resources and tools, primarily based around digital games. The SCKLF was established on the foundation of three core pillars: a comprehensive literature review confirmed through a two-step Delphi Study, a quali-quantitative survey of existing cybersecurity education initiatives, and an in-depth analysis of digital competence frameworks. This combination of theoretical and practical elements served to ground the SCKLF firmly within the cybersecurity education landscape. The SCKLF takes the form of a competency ontology for the cybersecurity domain (SCKLF Ontology). Ontologies are an important tool for formally representing, manipulating, and sharing knowledge. An ontology can be defined as a formal, explicit specialisation of a shared conceptualisation, consisting of concepts and the relationships between them [2]. The competence ontology was constructed in accordance with the COMP2 ontology proposed by [3].

2.2 Next steps

A multi-dimensional analysis of existing applied games for cybersecurity education will be carried out to ensure comprehensive understanding of the required teaching and learning skills. Specifically, to put the theoretical approach of the SCKLF into practice, the two games ‘Spoofy’ and ‘Nabbovaldo and the Cyber Blackmail’ will be incorporated into the gamification platform. Following specific teacher education activities, these games will then be piloted in the participating partner countries, providing a practical validation of the platform and its associated teaching and learning methodologies.

3 Conclusion

SuperCyberKids aims to enhance cybersecurity education through a game-based platform to promote safer internet use among children aged 8-13. Initial pilot studies will validate the platform and methodologies, paving the way for wider implementation. This paper outlined the project’s initial plans and rationale, presenting the current state of progress, while inviting community input for ongoing refinement.

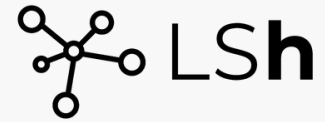
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