

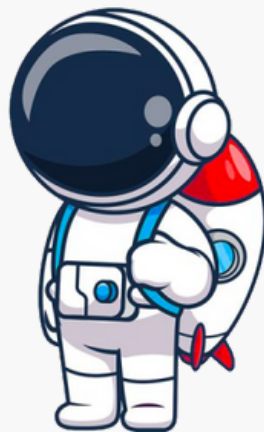


# HELMETO 2023

## UNIVERSITY OF FOGGIA

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

Foggia, September 13th - 15th, 2023



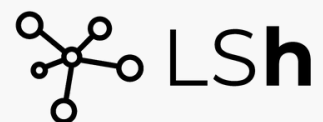
# BOOK OF ABSTRACTS

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Tutti i diritti sono riservati

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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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# **SPECIAL TRACK 10**

## **“BEYOND BORDERS: EXPLORING IMMERSIVE ENVIRONMENTS AND NEW DIDACTIC APPROACHES IN HIGHER EDUCATION”**

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# **Assessment as learning. Bridging research and practice between schools and Universities**

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## **1 Introduction**

The need to innovate teaching-learning practices to enhance students' learning outcomes and promote nowadays transversal skills often clashes with the reiteration of standardized and outdated teaching and assessment methods.

Recent developments in the assessment field have highlighted the need to shift the focus of assessment from the product (or the outcome) to the learning process itself, moving from an assessment of learning and for learning to an assessment as learning [1; 2], in which the student actively participates in the process. This perspective moves toward learning-oriented assessment practices [3; 2] and involves the integration of three key elements: tasks appropriate to the approach, development of assessment competence, and student involvement in feedback processes [4]. These practices thus support self-regulated learning by leading students to take an active role, monitoring their progress through self-assessment, reflecting on the effectiveness of their learning approaches, and considering their mistakes as an opportunity to learn and improve [5; 6].

The purpose of the present study is to investigate whether the change in assessment modes affects students' ability to self-regulate their own learning path.

## **2 The Training and Research-Action Pathway**

In the 2022-23 school year the University of Macerata (Italy) organized a research-action pathway involving several School Institutes in the Marche Region [7; 8]. Specifically, 125 teachers between kindergarten (8%), primary school (64,8%), and lower and upper secondary school (16,8% - 10,4%) enrolled in the course, involving 678 students.

The training course engaged teachers in rethinking daily teaching by introducing authentic tasks and revising their assessment practices by integrating and testing rubrics and student logbooks. It was conducted remotely and lasted 25 hours: 9 hours of webinars, 8 hours of group workshops, 8 hours of individual work (asynchronous) (see Table 1).

**Table 1.** Program.

Activity	Mode	Platform	Duration	Description
Webinar I	Plenary	Zoom	3 h	Preliminary meeting.
Workshop	Groups and sub-groups	Microsoft Teams	2 h	Summary of the proposal. Group work to define authentic task and rubric.
			2 h	Continuation of group work.
Webinar II	Plenary	Zoom	3 h	Alignment of group works. Analysis of sustainability and challenges.
Workshop	Groups and sub-groups	Microsoft Teams	2 h	Monitoring student logbooks. Experimentation report and feedback.
			2 h	Summary assessment.
Webinar III	Plenary	Zoom	3 h	Final assessment of the pathway. Effectiveness of tools and practices. Debate and final synthesis.
Individual work	/	/	8 h	Individual experimentation at schools.

### 3 Methods

The research hypothesis is that introducing an authentic assessment approach could impact students' self-regulation. Logbooks and the "Motivated Strategies for Learning Questionnaire" (MSLQ) [9] were used to trace and analyze this impact. The questionnaire was administered during the initial and final phase of the pathway to primary (from the third grade) and secondary school students via Google Forms in the two Italian versions of Bonanomi and colleagues [10; 11]. It investigated five macro-areas: intrinsic value; emotional sphere; self-efficacy; use of cognitive strategy; self-regulation.

### 4 Preliminary results and conclusions

Students' logbooks were analyzed qualitatively, while MSLQ data were traced and evaluated quantitatively. We collected answers from 678 students in the MSLQ pre-administration and 511 in the post-administration. From preliminary analysis, for all school orders, we note an increase in the average pre-post values of individual items, particularly in the macro-areas of motivation, self-efficacy, and use of cognitive strategies. Moreover, comparing absolute post-values for each macro-area, we detected some elements of continuity and differentiation among the three school orders. These results will be further explored and discussed in the full paper.

### References

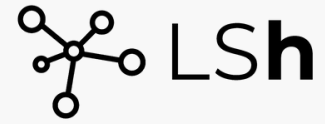
1. Earl, L.M.: *Assessment as Learning: Using Classroom Assessment to Maximize Student Success* (2nd edition). Corwin Press, Thousand Oaks, CA (2013).
2. Carless, D.: Exploring learning-oriented assessment processes. *Higher Education* 69(6), 963-976 (2015a).

3. Carless, D., Joughin, G., Mok, M.: Learning-oriented assessment: Principles and practice. *Assessment and Evaluation in Higher Education* 31(4), 395-398 (2006).
4. Carless, D.: *Excellence in university assessment: Learning from award-winning teaching*. Routledge, Abingdon (2015b).
5. Duncan, T.G., McKeachie, W.J.: The making of the Motivated Strategies for Learning Questionnaire. *Educational Psychologist* 40, 117-128 (2005).
6. Panadero, E., Andrade, H., Brookhart, S.: Fusing self-regulated learning and formative assessment: a roadmap of where we are, how we got here, and where we are going. *The Australian Educational Researcher* 45, 13-31 (2018).
7. Rossi, P.G., Giannandrea, L., Gratani, F., Laici, C., Tarantino, A., Paviotti, G.: Assessment as learning: transforming practices with secondary school teachers. In: Gómez Chova, L., López Martínez, A., Candel Torres, I. (eds.) ICERI2021 Proceedings, pp. 6543-6551. IATED Academy, Valencia (2021).
8. Gratani, F.: Towards Assessment as Learning: Findings from online courses for secondary school teachers. *Education Sciences and Society*, 432-433 (2021).
9. Pintrich, P., Smith, D., García, T., McKeachie, W.: *A manual for the use of the motivated strategies for learning questionnaire (MSLQ)*. University of Michigan, Ann Arbor, MI (1991).
10. Bonanomi, A., Olivari, M. G., Mascheroni, E., Gatti, E., Confalonieri, E.: Using a multidimensional rasch analysis to evaluate the psychometric properties of the Motivated Strategies for Learning Questionnaire (MSLQ) among high school students. *TPM: Testing, Psychometrics, Methodology in Applied Psychology* 25(1), 83-100 (2018).
11. Bonanomi, A., Cadamuro, A., Olivari, M. G., Versari, A., Confalonieri, E.: The psychometric properties of the Motivated Strategies for Learning Questionnaire (MSLQ): Multidimensional Rasch analysis on primary school data. *TPM: Testing, Psychometrics, Methodology in Applied Psychology* 27(4), 511-528 (2020).



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