SUMMIT RESEARCH

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Book of abstracts of the Research Summit 2024

July 16-19, 2024

University of Aveiro, Portugal

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Book of abstracts of the Research Summit 2024
under the theme "50 Years of Research at the UA: Challenges for the Future"

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Edited by:

Artur M.S. Silva
Vice-Rector for the Research, Innovation and Training in the 3rd cycle, University of Aveiro
Aveiro, Portugal

A. Gil Andrade Campos
Doctoral School, University of Aveiro
Aveiro, Portugal

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Preface

The Research Summit 2024 took place from July 16-19 under the theme "50 Years of Research at the UA: Challenges for the Future". This forum aimed to foster important debates among the University of Aveiro's research community, increase collaboration, advance the state of the art, and boost research efforts on campus. This year, discussions also focused on the future of the UA. The objectives of Research Summit 2024 were:

- To strengthen networking among faculty members, researchers, and students on campus, developing sustainable research partnerships for more efficient use of infrastructure, sharing of know-how, and contacts;
- To reflect on the past 50 years and discuss the future challenges for the research of the institution;
- To showcase the research carried out at the Research Units;
- To provide PhD students the opportunity to present their work, encouraging them to improve their communication and networking skills.

The Research Summit 2024 was organized differently at this year, with one extra day being added to the general programme. Regarding the structure, 6 UA commissioners were responsible for 6 topics (Materials and Energy, Information, Communication and Microelectronics, Environment and Ocean, Health and Society, Music and Digital Cultures & Education for the XXI Century) to be discussed by international and national experts. The research units coordinators also demonstrated in a pitch how the Unit has contributed to promoting inter, trans, and multidisciplinary research approaches, projecting the future of the unit along these lines. On the following 2 days, presentations by PhD students, as well as first and second cycle students involved in extracurricular research activities, took place, with more training provided to Ph.D. students and a "Best communication Award" in the end of the Summit. We thank the participants for their participation.

This Book of Abstracts and Proceedings, of the Research Summit 2024, is the result of remarkable contributions from young scientists and PhD students working on the topics of the Doctoral Programmes of the University of Aveiro. Although the Research Summit 2024 is aimed at young researchers, senior researchers have also contributed to the success of the conference through their contributions, fostering discussion and collaboration in the research papers included in the book of abstracts and proceedings. The presence of senior scientists and PhD supervisors was very fruitful for all participants and it is hoped that young researchers and PhD students benefited from this experience.

The organisers hope that this Research Summit 2024 was a remarkable opportunity for a fruitful exchange of ideas between the participants and a milestone in the history of the Forums at the University of Aveiro.

Artur M.S. Silva
A. Gil Andrade-Campos

Aveiro, Portugal, July 2024.

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The development of a GreenComp-inspired Questionnaire: Bridging EduCITY projects aims to broader contexts

João Ferreira-Santos[†,⋆,1], Lúcia Pombo[1], Margarida M. Marques[1], Rita Rodrigues[1]

1. University of Aveiro - Campus Universitário de Santiago, 3810-193 Aveiro, Portugal

⋆ Corresponding author; joaomrsantos@ua.pt; † Presenting author; Education.

Abstract. To achieve an effective sustainability, it is important to create strategies or activities that surpass mere awareness-raising efforts (Wiek, et al., 2011; Redman & Wiek, 2021). These activities are important, but we need to understand their impact to make changes for sustainable development (Annelin & Boström, 2022). This paper outlines a questionnaire on the impact of EduCITY games and activities (https://educity.web.ua.pt/) in Education for Sustainability. It summarizes the extensive research process of questionnaire development, which involved stages like mapping existing instruments (Reichmann, et al., 2021), reviewing Sustainability Education assessment instruments (Annelin & Boström, 2022), and choosing GreenComp (Bianchi, et al., 2022), the European sustainability competence framework as base for the new questionnaire. This questionnaire has been developed within the specific context of EduCITY games and activities and can be used in other educational and training contexts. Moreover, this instrument has been adapted for use with the Portuguese population. This paper presents the process of developing this questionnaire, demonstrating the various stages involved in its development (Reichmann, et al., 2021; Creswell & Creswell, 2023). These include the collaboration of various national experts, the implementation of different pilots, the application of an initial version, and the subsequent validation process by international experts. The subsequent stages of questionnaire development involved a process of content analysis, including the examination of the content of the used statements and the use of software (JASP team, 2018) designed for the validation of this type of research instrument. These processes showed that the questionnaire was valid (Reichmann, et al., 2021; Creswell & Creswell, 2023). Regarding the reliability of the instrument, it is recommended that further research be conducted by applying the questionnaire to a larger number of participants. It would also be beneficial to apply the questionnaire in a longitudinal logic, rather than in a one-off study (Reichmann, et al., 2021). This would facilitate a more comprehensive understanding of the instrument's value and the activities it evaluates.

Keywords: *Competences for Sustainability; Sustainable Development; GreenComp; Questionnaire development; EduCITY*

References.

Annelin, A., & Boström, G. O. (2022). An assessment of key sustainability competencies: a review of scales and propositions for validation. International Journal of Sustainability in Higher Education, 24(9), 5369. https://doi.org/10.1108/IJSHE-05-2022-0166

Bianchi, G., Pisiotis, U., Cabrera, M., Punie, Y., & Bacigalupo, M. (2022). The European sustainability competence framework. In Publications Office of the European Union. https://doi.org/10.2760/13286

Creswell, J. W., & Creswell, J. D. (2023). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (6th ed.). SAGE Publications, Inc.

JASP Team. (2024). JASP (0.18.3.). JASP. https://jasp-stats.org/

Redman, A., & Wiek, A. (2021). Competencies for Advancing Transformations Towards Sustainability. Frontiers in Education, 6(November), 111. https://doi.org/10.3389/feduc.2021.785163

Reichmann, S., Klebel, T., Hasani-Mavriqi, I., & Ross-Hellauer, T. (2021). Between administration and research: Understanding data management practices in an institutional context. Journal of the Association for Information Science and Technology, 72(11), 14151431. https://doi.org/10.1002/asi.24492

Wiek, A., Withycombe, L., & Redman, C. (2011). Key competencies in sustainability: A reference framework for academic program development. Sustainability Science, 6(2), 203218. https://doi.org/10.1007/s11625-011-0132-6

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