

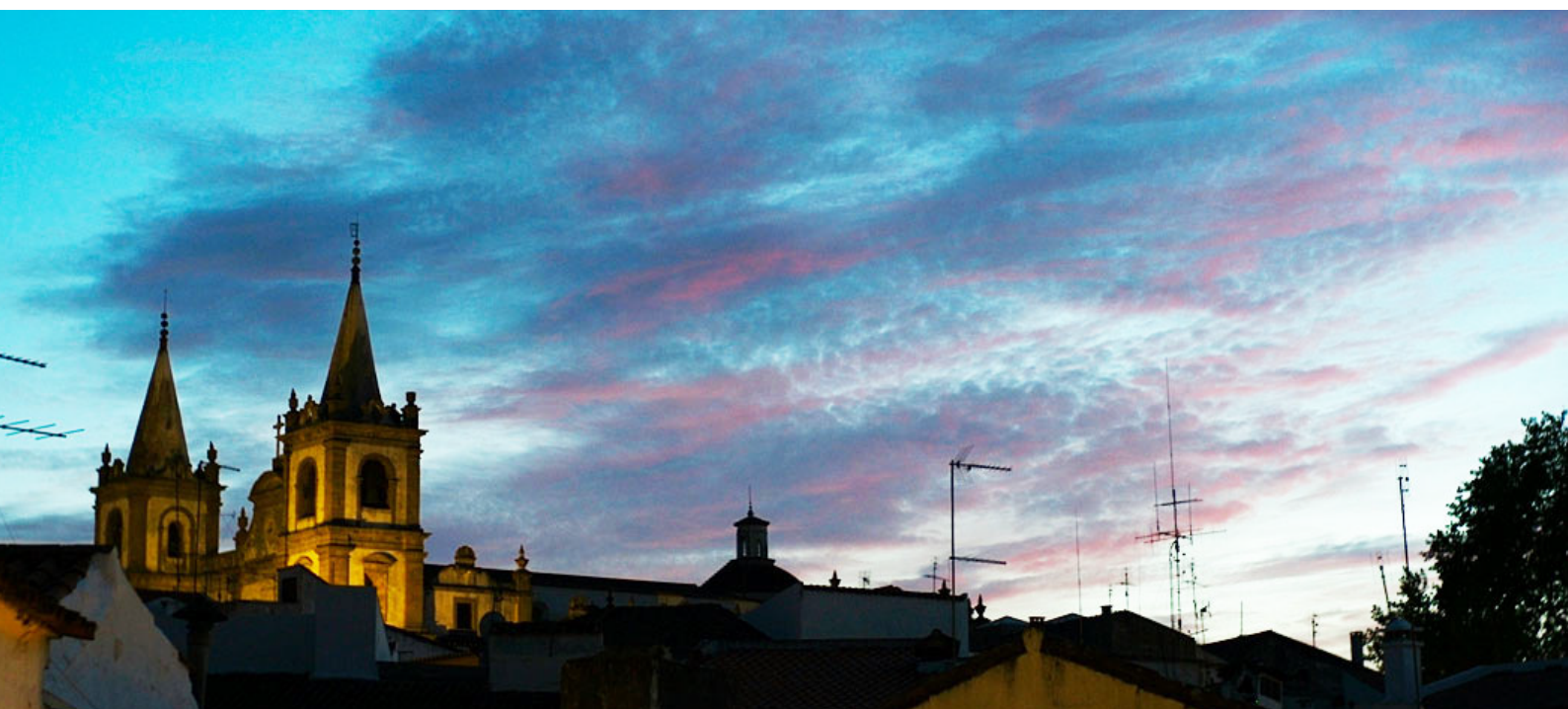
# 26th EUCLIDES Network General Meeting

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INTERNATIONAL CONFERENCE  
"Education and Research for the Next Decade"

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**BOOK OF ABSTRACTS**



Portalegre, 02-03 May 2019

# 26th EUCLIDES

## Network General Meeting



INTERNATIONAL CONFERENCE

**"Education and Research for the Next Decade"**



**BOOK OF ABSTRACTS**

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Vanda Correia

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- . Wim Polet, KU LEUVEN – Faculty of Engineering Technology, Belgium

## PROGRAMME

THURSDAY, 2<sup>nd</sup> May, 2019

**9:00 Welcome Session**

**Luís Loures**, Vice Presidente of the IPPortalegre

**João Emilio Alves**, Pro-President of the C3i, IPPortalegre

**Eduarda Ferreira**, Network coordinator, ISEP-P.Porto

**Maria José Varadinov**, Local Chair, IPPortalegre

**9:30 Plenary Session**

**Miguel Avillez** | Évora University, Portugal

*Evaluation of computing (with supercomputers), observing (with space telescopes) and traditional research projects*

**SESSION 1 - 10:10–10:40**

**10:10 Philip Keersebilck** | KU Leuven, Faculty of Engineering Technology, Belgium

*Use of digital technology in education*

**10:25 Miguel Castro** | School of Education and Social Sciences – IPPortalegre, Portugal

*Unsuspected Pedagogical Resources*

**SESSION 2 - 11:00–12:30**

**11:00 Paulo Canário** | School of Technology and Management – IPPortalegre, Portugal

*Be Aware Students*

**11:15 Estibaliz Apiñaniz** | Faculty of Engineering Vitoria-Gasteiz, Basque Country/Spain

*Two new double degrees at the Faculty of Engineering Vitoria-Gasteiz*

**11:30 Karin Van Loon** | Brussels Brabant University College, Belgium

*Train the trainees. Train future trainers in radiation protection and nuclear technology*

**11:45 João Miranda** | School of Technology and Management – IPPortalegre, Portugal

*A Glance on Research Data Challenges*

**12:00 Eduarda Pinto Ferreira** | ISEP-P.PORTO, Portugal

*EngineeriNg educaTors pEdagogical tRaining*

**12:15 Vanda Correia** | School of Technology and Management – IPPortalegre, Portugal

*Metadesign – Considering new methodologies in education and research*

**SESSION 3 - 14:15–15:30**

**14:15 Cristina Dias** | School of Technology and Management – IPPortalegre, Portugal

*Adjustment of a single model for symmetric matrices*

**14:30 Paulo Canário** | School of Technology and Management – IPPortalegre, Portugal

*3Economy+*

- 14:45** **Fernanda Policarpo** | School of Technology and Management – IPPortalegre, Portugal  
*How To Teach Entrepreneurship A Methodology of Teaching*
- 15:00** **João Miranda** | School of Technology and Management – IPPortalegre, Portugal  
*Higher Education and the Knowledge Triangle: What About the Employability in the Digital Era?*
- 15:15** **Maria Varadinov** | School of Technology and Management – IPPortalegre, Portugal  
*Stakeholders for Pharmaceutical Supply Chains Within the COST Action "Medicines Shortages" (CA15105)*

#### POSTER SESSION - 15:30–16:00

*BE Aware STudent (BEAST) teachers' academy*

**Maria Varadinov** | School of Technology and Management – IPPortalegre, Portugal

*A note on the commutativity in models with orthogonal block structure*

**Carla Santos** | Department of Mathematics and Physical Sciences – IPBeja, Portugal

*Inference to perform a series of Studies*

**Cristina Dias** | School of Technology and Management – IPPortalegre, Portugal

*Mutual fund and risk investor/Evaluation*

**João Romacho** | School of Technology and Management – IPPortalegre, Portugal

*The CV Guidelines from the 3Economy+*

**Paulo Canário** | School of Technology and Management – IPPortalegre, Portugal

*A importância da arte terapia na intervenção de alunos com Perturbação de Hiperatividade com Défice de Atenção*

**Ana Cordeiro** | Agrarian Superior School of Elvas – IPPortalegre, Portugal

*High performance computing training. Advancing science and increasing the competitiveness of SMEs by using supercomputer facilities*

**Miguel Avillez** | Évora University, Portugal

*Reasoning about data: a focus on graphing*

**Carla Santos** | Department of Mathematics and Physical Sciences – IPBeja, Portugal

*Adaptation of Higher Education to the Digital Generation Submitted Project*

**Maria Varadinov** | School of Technology and Management – IPPortalegre, Portugal

*Education for Sustainability. A contribution from design methods*

**Vanda Correia** | School of Technology and Management – IPPortalegre, Portugal

FRIDAY, 3<sup>rd</sup> May, 2019

## Parallel sessions – 9:00-12:00

09:00 **Geral management Euclides Meeting**

### SESSION 4 - 9:00–10:30

- 09:00 **Ana Paula Gaspar** | School of Technology and Management – IPPortalegre, Portugal  
*Sorrisos Forçados*
- 09:15 **João Romacho** | School of Technology and Management – IPPortalegre, Portugal  
*Competition in the industry of asset management. Analysis on different settings*
- 09:30 **Cristina Dias** | School of Technology and Management – IPPortalegre, Portugal  
*Time – Tasks: An Einstein approach!! (Task Managment)*
- 09:45 **Hermelinda Carlos** | School of Technology and Management – IPPortalegre, Portugal  
*Planear a Comunicação: O caso aplicado a uma Fundação em Portugal*
- 10:00 **Carla Santos** | Department of Mathematics and Physical Sciences – IPBeja, Portugal  
*Students' feedback towards using Kahoot as a formative assessment tool*
- 10:15 **Isabel Borges** | School of Technology and Management – IPPortalegre, Portugal  
*Polynomial Regression Analysis – Modeling of Granite Degradation Over Time*

### SESSION 5 - 11:00–12:00

- 11:00 **Carla Fonseca** | University of Extramura (Badajoz) – IPPortalegre, Portugal  
*O aluno como cocriador de valor*
- 11:15 **Jorge Figueiredo** | School of Technology and Management – IPPortalegre, Portugal  
*As Vendas Modernas: Verdade ou Teatralização?*
- 11:30 **Pedro Rodrigues** | Universidade Lusíada Norte, Portugal  
*A Relação entre Público e Privado no Século XXI: Uma Nova Pedagogia para as Redes Sociais*
- 11:45 **Maria Varadinov** | School of Technology and Management – IPPortalegre, Portugal  
*The Education of the Digital generation – Project AHEAD*
- 12:00 **José Ribeiro** | Universidade de Trás-os-Montes e Alto Douro, Portugal  
*Otimização Aerodinâmica de um Dirigível*
- 12:15 **Closing the Meeting**

# Plenary Session

# Evaluation of computing (with supercomputers), observing (with space telescopes) and traditional research projects

Miguel A. de Avillez

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## ABSTRACT

Using supercomputers to carry out large scale, high-resolution simulations of different phenomena requires the submission of proposals that include the scientific case, as well as the objectives, milestones and work plan, but also a technical discussion regarding the use of a supercomputer facilities and the use of a specific software and how it scales with large amount of cores/CPU's. Proposals for observing time with space telescopes must in addition to the scientific case include the details of the object to be observed (target) and justify the need of the space telescope, as well as, the amount of photons that are expected to obtain meaningful spectra. So, basically one applies to the use of a specific resource (supercomputer or telescope) and needs to justify adequately the need of such expensive tool. In the traditional projects such constraint/demand does not apply. The differences between these projects and the traditional ones reside in the technical issues related to the requested resources, while the evaluation process comprises the same standards and quality demanding.

## KEYWORDS:

Research projects, observing time, computing time, project evaluation



# Session 1

# Use of digital technology in education

Philip Keersebilck

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## ABSTRACT

Everyone goes digital, including KU Leuven. 'Going digital' is one of the five points in our university's strategic plan. We want to focus on educational technology that facilitates collaborative learning and multi-campus education and broadens international reach.

This lecture discusses how technology can support education in KU Leuven. Which technologies are currently being used? What are the added value, pitfalls and opportunities?

## KEYWORDS:

Education, technology, digitization

# Unsuspected Pedagogical Resources

New teaching methods

Miguel Castro

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## ABSTRACT

In a world where it seems to be consensual that the speed of change and a high level of unpredictability is the rule and not the exception, one of the major issues that formal (school) education faces is to be able to compete with the digital environment and the circulation of information. Marc Prensky and Ken Robinson insist on the need to prepare students with tools that go far beyond cognitive aspects. The stimulation of creativity and critical thinking, accompanied by all the other so-called "soft skills" that UNESCO and OECD recommend, are slowly changing classroom practices from pre-school to high school. Despite this change, Superior Education, responsible for the initial formation of Teachers and Educators, presents a very tenuous change of pedagogy and essentially of the didactics. The most notorious change in classes at this level of education are the electronic presentations (interactive whiteboard included) and the use of computers, where the browsers complement the elaboration of practical works and the search for information to produce their critical essays. But basically, classes have hardly changed their patterns.

What we present here are small experiments carried out with simple and available didactic resources (also through the digital world) that allow to create work environments in the classes of higher education much more similar to the updated world of the students, which is inevitably different from the one we had 30 years ago.

The resources we have come to rely on are essentially cinema, music, documentaries, reports, poetry and comic books (films), always looking for a balance between the universe of the students and the classics. None of these seems strange; the strange thing is how seldom they are used. Concomitantly with these resources we also try to change the teaching space.

In all Curricular Units we have always used these resources according to the methodology proposed by Velez de Castro (2015: 7) in relation to cinema in the classroom.

The successes of these resources for the introduction of concepts have been extremely positive, not only in the achieved (measurable) academic results, but also in the transformation of the pedagogical relation, which by being closer,

allows more effective interactions and increases the quality of work, developing a critical look on problems. From this reality, we also hope that future Teachers, Journalists or Social Service Technicians will be able to use these ubiquitous resources that can always be in line with the audiences we deal with.

#### KEYWORDS:

Didactics resources, Knew Skills in Education, Superior Education

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# Session 2



## BE Aware STudent (BEAST)

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## ABSTRACT

Students have great difficulties related to the conscious and responsible choice of their educational path and there is a lack of capacity in the choice of subjects and topics on which the student should concentrate especially during the studies, since the knowledge of these aspects is highly valuable in the labor market and is appreciated by future employers. A great dynamic of changes in the labor market for IT graduates and the rapid development of the technology sector are additional factors that intensify the situations mentioned. To address the problem, project proposal objectives were defined: Increase student awareness of specialty choice; Improve the level of student entrepreneurship; and Minimizing the competence gap between curricula and labor market requirements. To this end, it is intended to develop job-related skills profiles for IT students, to develop tools to support teachers in the use of innovative methods and techniques, and an internet platform in the form of a guide guiding the student in the collection of knowledge and skills within the chosen specialization.

## KEYWORDS:

Skills, Knowledge, Labour Market.

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## Two new double degrees at the Faculty of Engineering Vitoria-Gasteiz

Double Degree in Computer Engineering and Business  
Management and Administration

Double Degree in Mechanical Engineering and Business  
Management and Administration

Estibaliz Apiñaniz, Xabier Sancho, Inmaculada Tazo, Amaia Mesanza,  
Ruperta Delgado, José Antonio Ramos, José Manuel López Guede  
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## ABSTRACT

In this presentation, we will inform about the two new Double degrees that will start next academic year at the Faculty of Engineering Vitoria-Gasteiz: *Double Degree in Computer Engineering and Business Management and Administration*, and *Double Degree in Mechanical Engineering and Business Management and Administration*. First, we will explain how and why they were developed and afterwards, we will explain their structure and possibilities.

In the Basque Country, there is a big demand of graduates in Business and Administration and Engineers, in addition, the 99% of the enterprises are small or medium sized and the 94% of enterprises has less than 10 workers. Therefore, we thought that a double degree that could gather both Engineering and Business and Administration would suit the profile these small enterprises are looking for.

In our Country, Bachelor's Degrees are 4-year degrees (60 ECTS per year), so in these double degrees modalities the student will have the chance to obtain two degrees in 5 years. By studying up to 15 ECTS more per year, by making two final year projects and by taking into account that instead of the optional credits common degrees offer, the students will have to course subjects from the second degree.

The Faculty of Engineering Vitoria-Gasteiz will offer fifteen seats for each double degree and we think it would be a great challenge for students that like engineering and are willing to develop their own ideas.

## KEYWORDS:

Double Degree, Computer Engineering, Mechanical Engineering, Business and Administration

# Train the trainees – Train future trainers in radiation protection and nuclear technology

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## ABSTRACT

The Nuclear Unit of ISIB present a Strategic Partnerships developing a new training program.

The objective is the development of a training program in radiation protection and nuclear technology mixing technological aspects but also management and communication skills for three different axis:

- Radiochemistry and medical application
- Environmental radioactivity
- Nuclear reactors and waste management

Two weeks of training activities will be developed for each axis brining student from the different partner together in one location. E learning modules will be used for pre requisite for the training program

The Strategic program start in September 2018 for a duration of 24 months.

Six countries and seven Academic partners cooperate for the development of this program. A non-academic partner adds a value to the partnership.

The presentation will address the details of the program but also the opportunities and threats for the future.

## KEYWORDS:

Strategic partnership, new pedagogic activities, mobility, nuclear and medical physics

# A Glance on Research Data Challenges

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## ABSTRACT

Data Science methodologies and data-driven decision making are requiring new tools, (e.g., analytics, big data, intensive computing, standards), that are being incorporated with the Research Data Alliance-RDA to enable open data, by sharing and re-using data across technologies and scientific domains, in this way addressing the large and complex societal challenges. A convenient glance on research-based topics within the large landscape of RDA activities is presented, namely, the RDA node in Portugal (RDA-pt) and the main purposes addressing the development of open data policies and open science activities. For that, well prepared practitioners and young researchers are needed, their training and updating on data research requires specific attention, and thus the multiple implications and future developments are discussed.

## KEYWORDS:

Research Data Alliance; Open Data; Open Science

## REFERENCES:

Research Data Alliance <https://www.rd-alliance.org/>

RDA in Portugal <https://rd-alliance.org/groups/rda-portugal>

# EngineeriNg educaTors pEdagogical tRaining

## ERASMUS+ PROJECT

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## ABSTRACT

EngineeriNg educaTors pEdagogical tRaining (ENTER) aims at creating a novel multicultural and international approach for formal post-graduate professional and pedagogical education for engineering educators. Furthermore, it is focused on low cost and convenience, thus strongly based on e-learning technologies, whenever feasible, and designed with the objective of being internationally recognized and accredited. Our partners in this project **Co-Funded by the ERASMUS+ Program of the European Union** are the following universities and associations: Instituto Politécnico do Porto; Dubnica Institute of Technology in Dubnica nad Váhom; Tallinn University of Technology; National Research Tomsk Polytechnic University; Kazan National Research Technological University; Tambov State Technical University; Don State Technical University; Association for Engineering Education of Russia; Al-Farabi Kazakh National University; E.A.Buketov Karaganda State University; Kazakhstan Association of Engineering Education; Vyatka State University and Agency of Educational Strategies & Initiatives "Bologna Club".

In order to design the ENTER programme, a thoroughly market and requirements analysis of HEIs and educators needs will be conducted, focused on the EU and partners' countries, but also considering opportunities in other markets like North Africa, South America and Asia.

The purpose of the ENTER program, which proposes a hierarchy of 3 structured educational programs for engineering educators in the context of the European Qualifications Framework for Lifelong Learning, is to have an international accreditation.

## KEYWORDS:

Assessment, Quality Assessment and Methodology, E-learning, Blended-learning, Accreditation, CDIO Standards: 2, 3, 7, 8, 9, 10, 11, 12

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# Metadesign

Considering new methodologies in education  
and research

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## ABSTRACT

As an exploration of new approaches to education and research in the next decade, this presentation intends to verify the relevance of an approach that considers the assumptions and methodologies of metadesign.

The first observation is that there is a constant evolution in design methodologies and also in the applications or interventions that it has taken over the last decades, partly caused by the ubiquity of digital technologies. New challenges arise at every moment, accompanying the technological, economic, social and cultural development. One approach to design research and design methodologies that addresses the challenges of the present scenario is metadesign. This approach upholds the importance of the interdisciplinary perspective and aims to account for the increasing complexity of the problems that are presented to design interventions/projects.

The concept of metadesign emerged in the early 1960s, inserted in the midst of industrial design and with connections to complexity theory and information systems. In the 1970s and 1980s, metadesign continued in association with semiotics studies and information technologies. In the late 1990s, with the expansion of the Internet and other networked information technologies, this approach to design gained more space, relating to participatory design and user-centered design. One of metadesign main goals today is to empower people for "informed participation". Another objective is to strengthen design practices in interdisciplinary teams, with the aim of generating a more synergistic society and ensuring sustainable development.

This presentation, based on the review of the recent literature, intends to outline a characterization of current metadesign and to find methodologies that may be useful and applicable to the development of new approaches in the areas of education and research. The next step will be to test the methodologies in real context.

## KEYWORDS:

Metadesign, interdisciplinary methodologies

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# Session 3



# Adjustment of a Single Model for Symmetric Matrices

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## ABSTRACT

The models that we consider are based in the spectral decomposition of the mean matrices. In this work we propose a new formulation introducing vec operators, which simplify for symmetric stochastic matrices the adjustment and validation. This validation being new, give us a theoretical support for the use of rank one symmetric stochastic matrices. These vectorial operators, besides presenting themselves as an important part in the new formulation for these models, also facilitate the presentation of these results.

## KEYWORDS:

Inference; Vec operators, Structured families

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## 3Economy+

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## ABSTRACT

3Economy+ (3E+) is an innovative project in the context of the European Higher Education Area aiming to develop a student-centred methodology and competence-based learning to enhance students' professional profile in the area of Economics, mainly Business, Tourism and Marketing, and plurilingualism too. It aims to develop and implement innovative learning modules and international internships, as well as the exchanges of excellence students among the three participating universities in the three main subareas of Business, Tourism and Marketing. The project will focus on the development of students' knowledge and understanding of new trends in Economics from an international perspective. Apart from the focus area, students would develop their competence in two more languages (Spanish, English or Portuguese), as well as their intercultural and professional skills, such as teamwork, problem-solving capacity and leadership.

## KEYWORDS:

Skills, Knowledge, Labour Market.

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# How to Teach Entrepreneurship

## A Methodology of Teaching

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## ABSTRACT

the teaching of entrepreneurship, intending to develop innovative and creative abilities in students, also intends to be the assimilation of a constructive attitude towards the surrounding reality. According to Ambrósio (2001, p.180), "critical thinking, problematic creativity, interdisciplinary communication skills" are, in today's society, as or more important than professional knowledge and scientific knowledge. In this sense, the existence of more flexible study programs, less restricted by disciplinary boundaries, is of particular relevance because "the role of university education, even of a technological nature, must be to prepare the citizen to solve complex and new problems, that is, help you think. (...) Above all, we must overcome the laziness of watertight behaviors and begin to think and teach in transversal and profound terms "(Calado, 1998, p.37).

Higher education should proactively promote the flexibility of individuals as members of an ever-changing society (Conceição, P., Durão, D., Heitor, M., Santos, F., 1998). It should be the student considered as the major objective of higher education, understood in terms of the person's learning and development, but not the knowledge, knowledge and skills that the student should learn, as evidenced by the proposals of several authors (Barnett, Eljamal and Ambrósio). All this with the aim of "giving the individual a social, professional and personal understanding of what the profession is" (Ambrósio 2001, 165).

In this sense, and as a way of helping to deconstruct this same reality, leading students to be proactive, leaving aside the passive posture present in most of their classes (reflecting a very academic teaching system), their evaluation is indexed to the development of three works whose objective is the understanding and practice of entrepreneurship.

In the first work, trying the appreciation of the local entrepreneurs is requested the elaboration of a poster presenting the entrepreneur and his project, in order to a greater appreciation and knowledge of who they are and why they are.



In the second work aiming at the understanding that social entrepreneurship is important for society and that allows the involvement of all, we have developed a social and sustainable initiative, which, being submitted to external competition, allows us to assess the importance of its development.

Finally, we create an idea of a product / service or organization that responds to a need or is an opportunity detected or felt by the student.

In this way, by fighting against the initial inertia felt in most classes, we can interact with our surroundings to develop useful and necessary initiatives. On the other hand, the practical and conscious application by the students of initiatives that make happen in addition to allowing a greater depth of knowledge allows a greater visibility of the entrepreneurial initiatives developed in a classroom context.

#### KEYWORDS:

Entrepreneurship, Methodology, Sustainable

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# Higher Education and the Knowledge Triangle:

## What About the Employability in the Digital Era?

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## ABSTRACT

A number of contributions are being addressed the knowledge triangle on Education-Research-Innovation, and further developments are expected both at European and international level. In fact, the digitally-enabled deployment of innovative tools, the translation of knowledge into market, all of them require the proper utilization of the new ICT phenomena (e.g., big data, cloud computing, mobile platforms, social business).

For that, research on quantitative-based tools related with data analytics, high performance computing, modeling-simulation-optimization, biomathematics, and others, shall be promoted. In this way, Higher Education and the strategic factors within are being under analysis, from the enrolment of students until the transition of graduates into the labor market, and also the lifelong learning issues.

A convenient view of selected international studies and projects is also presented, namely, the research topics, interactions with other sciences and fields, collaborations with the labor market, and the role of quantitative-based tools (e.g., Mathematics, Operations Research, Statistics) for the European competitiveness and sustainability is thus questioned: *what about the employability for the digital era?*

## KEYWORDS:

Higher Education; Knowledge Triangle; Employability; Digital Era.

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# Stakeholders for Pharmaceutical Supply Chains Within the COST Action "Medicines Shortages" (CA15105)

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## ABSTRACT

Within the COST Action “Medicines Shortages” (CA15105), the engagement of stakeholders in pharmaceutical supply chains (SC) and the related data management plans are very important to foster international cooperation and to mitigate the disruptions originating drugs shortages. At now, a current initiative to promote the engagement of stakeholders considers the data management issues (data privacy, intellectual property) within each one of the SC stakeholders (hospital pharmacies, pharmaceutical industry, wholesalers/retailers), and the utilization of the most advanced IT tools (IBM support). A strategy for the management of conflicts between the SC stakeholders is discussed, and further developments in the multi/trans-disciplinary research addressing “Medicines Shortages” topics are outlined,

## KEYWORDS:

Medicines Shortages; Pharmaceutical Supply Chains; Stakeholders.

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# Session 4



# Sorrisos Forçados

## A humanização no Ensino

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## ABSTRACT

A evolução tecnológica foi rápida e a adaptação também, contudo, a sociedade em geral não acompanhou essa progressão. O que significa então o progresso? Se este é de carácter unicamente técnico e tecnológico? A questão maior prende-se com os alunos que chegam ao Ensino Superior sem condições mentais de captação de mais conhecimentos, chegam esgotados e demasiado cansados. Porquê? Quais as causas que estão a provocar este problema? Todo um progresso tecnológico, com base na máquina: telemóvel e computador, não cumpriu a sua função? Não foram atingidos os seus objectivos? Quais são então os objectivos da tecnologia? Servem para quem? E para quê? Para acelerar processos? Quais os processos de carácter humano? Nunca, com tantos recursos tecnológicos, os índices de depressão grave foram tão altos na camada jovem estudantil, e cujos índices de infelicidade foram tão baixos. E ao contrário do que se esperava, as redes sociais invadiram a vida destes jovens, e encontram-se cheias de sorrisos e de encontros maravilhosos. Talvez a obrigação de manter um sorriso, mesmo que seja forçado, leve a um estado de degradação emocional, contribuindo para que todos se insiram numa sociedade alienada dos seus sentimentos genuínos, e que caracterizam um estado humanizado.

A partir de um texto “A traição do eu”, e cujo âmbito se encontra em análise, colocam-se os problemas do intelecto e de uma aprendizagem de carácter social ao nível da relação entre emoção e aprendizado. Deste modo, e tendo em conta esta relação de aproximação ao jovem estudante, e cuja falta deste ímpeto se torna difícil uma aquisição de conhecimento, bem como o prolongamento da sua memorização e integração.

Tendo em consideração estes aspectos de carácter social e cultural, e visto que as condições técnicas e de tecnologia dizem respeito ao âmbito sociológico mais elevado, colocam-se ainda as seguintes questões: o que fazer para melhorar as condições emocionais de captação e de acesso ao conhecimento intelectual e emocional? Será apenas com recurso à máquina e à apresentação técnica brilhante e entusiasmante, sem estabelecer qualquer vínculo afectivo e de carácter emocional expresso?

A análise efectuada com base na observação directa de alunos que acedem ao Ensino Superior nos recentes anos lectivos, demonstram a ineficácia tecnológica, apenas com o uso de aparelhos técnicos evoluídos. Apenas se conseguem resultados com uma aproximação maior ao estudante e sobretudo com uma relação de aprendizagem, tendo como base uma afectividade ligada ao intelecto. Ainda a problemática das turmas extensas e com grandes grupos de trabalho para acompanhamento. O século XXI teria que resolver as questões numéricas e reduzir os grupos de trabalho para um máximo de 10 a 15 estudantes no Ensino Superior e por turma. Contudo, o que assistimos é o contrário, o que dificulta uma aproximação ao individuo. Este sistema de ensino não tem resultados proveitosos a médio e a longo prazo.

A eventual resposta encontra-se numa aproximação do docente ao aluno, permitindo um desenvolvimento pessoal, bem como o despertar de uma personalidade própria de modo a adquirir as competências técnicas e tecnológicas que a sociedade lhe exige, contudo, acrescentando um âmbito afectivo e humanizado de modo a contribuir para um sociedade mais equilibrada emocionalmente.

#### KEYWORDS:

Ensino, Emoção, Despertar

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# Competition in the industry of asset management

## Analysis on different settings

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## ABSTRACT

The industry of asset management is an essential sector for economic growth, which has assumed, in the last decades, an increasing importance in the US and Europe. So, the competition in the mutual fund industry study is of paramount importance for several reasons. For the quality, variety and cost of financial products, as well as by understanding the volatility of the portfolios in response to competition in the sector.

Brown, Harlow e Starks (1996) (BHS) were the first to study the mutual fund competition and to confirm their hypothesis that the mutual fund with worse performance in the middle of the year tend to increase more the portfolio risk in the last part of the year (competition behaviour). In the present work it is applied this methodology.

The sample selected for this study consists of stock mutual funds, including surviving and extinct funds, from different countries of European Union (EU). Its is analysed subperiods with the same duration and subperiods that correspond to different market cycles, the characteristics of the funds are also contemplated (the dimension of their portfolio and its period of activity), as well as the possible effect of the survivorship bias.

Given the different settings analysed, it seems there will be strategic behaviour among EU mutual funds, with higher strength in Belgium, Spain and UK. This behaviour will be, except in the UK, more clear in mutual funds with smaller period of activity and in the most recent period. In these three countries, the most favourable settings for strategic behaviour will be: to Belgium, in the subperiod 2 and in bear market; to Spain, in the subperiod 2, in bull market, to younger mutual funds and to smaller portfolios; and, to UK, in the subperiod 1 and to older mutual funds.

These results show that, on the one hand, the greatest interaction among younger mutual funds may come from their greater fearlessness, opposition to older mutual funds that seem to reveal greater careful foresight. On the other

hand, the EU market growth in terms of mutual funds seems to contribute to increase the strategic behaviour.

#### KEYWORDS:

Competition; Strategic behaviour; Mutual funds

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# Time – Tasks: An Einstein approach!!

## (Task Management)

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## ABSTRACT

Higher education has been gradually changing in the last 25 years in order to promote greater student autonomy, changing the traditional role of the teacher into a more coaching profile style, that is, a tutorial teaching. However, as teachers we can easily realize that most students entering higher education system are systematically faced with extreme difficulty in managing their available time in order to maximize their use to achieve the best possible performance as students, without harming their personal quality of life and social relationship. This article intends to present to students of higher education, in a simple way, one of several techniques available to carry out a planning and management of the scientific tasks that usually arise associated to their academic course, so that the time spent in the accomplishment of these tasks “shrink”, thus allowing a decrease in stress, better academic performance and a better quality of life.

## KEYWORDS:

Higher education, Academic performance, Stress dealing, Tasks management

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# Planear a Comunicação

## O caso aplicado a uma Fundação em Portugal

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## ABSTRACT

Este artigo pretende apresentar uma descrição das práticas pedagógicas que foram levadas a cabo por alunos do curso de Jornalismo e Comunicação – vertente de Comunicação Organizacional, em colaboração com alunos e professores de outros cursos do Instituto Politécnico de Portalegre. O trabalho foi desenvolvido no âmbito da unidade curricular de Oficina de Relações Públicas.

O objectivo principal desta “experiência” pedagógica visa apresentar um projecto de comunicação para a Fundação Cidade de Ammaia, que contempla as áreas do marketing, publicidade, comunicação e design, com um plano articulado de acções que visam relançar a marca “Ammaia” nos mercados turísticos nacional e internacional e consequentemente atrair um maior número de visitantes, angariar novos financiamentos e parcerias, e simultaneamente apostar na potencialização do espaço da Fundação Cidade de Ammaia para a concretização de eventos futuros.

As metodologias adoptadas visam o desenvolvimento de diversas atividades curriculares, bem como a aquisição de novas competências transversais, que potenciam a autonomia de atitudes de trabalhos, pensamento crítico, responsabilização e envolvimento dos alunos na apresentação de soluções, capazes de alcançar o sucesso do projecto.

Os resultados da avaliação das aprendizagens obtidos neste trabalho académico em contexto real, revelaram uma maior expressão da sua criatividade e confiança no conhecimento teórico, resultante do contacto com o objeto de estudo; permitiram o desenvolvimento da sua literacia de comunicação e design, bem como a construção de novos conhecimentos transversais e didáticos.

## KEYWORDS:

Comunicação, relações públicas, Ammaia.

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# Students' feedback towards using Kahoot as a formative assessment tool

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## ABSTRACT

Students-centered learning is an innovative educational solution that stresses learners to have an active role on their own learning, and where they are “treated as co-creators in the learning process, as individuals with ideas and issues that deserve attention and consideration” (McCombs and Whistler, 1997). Two of the possible approaches to these innovative learning methods is a relocation of the assessment, assigning a prominent role to the formative assessment as an instrument for the regulation of the process of teaching-learning, and the inclusion of new technology, to improve students’ engagement, motivation, and productivity (Roblyer & Doering, 2010).

Assuming student’s motivation as essential for quality education, and that the five key ingredients impacting student motivation are: student, teacher, content, method, and environment (Williams, 2011), successful learning strategies must consider the profile of the students, meeting their interests, preferences and expectations.

Taking advantage of the instructional benefits of the smartphones, reported in e.g. Daher (2010), and of their quality of portable microcomputers making available instructional features and applications (apps), the gamification of the process of teaching-learning became one of the innovative approaches to address and handle the new generation of learners.

For the game-based learning there are diverse platforms, among which is Kahoot. Since benefits of the use of smartphone to assessment and reflection are well known (Markett, Sanchez, Weber & Tangney, 2006) and Kahoot combines game environment with the potential of monitoring student learning, we use this game-based platform as formative assessment tool.

In this work we present a formative assessment activity performed with Kahoot, investigating student’s feedback towards Kahoot as a formative assessment tool.

## KEYWORDS:

Innovative educational solutions, motivation, Kahoot, smartphone.

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# Polynomial Regression Analysis

## Modeling of Granite Degradation Over Time

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## ABSTRACT

The development of methodologies to predicting the useful life of materials used in construction is fundamental for the optimization of its application and maintenance in the short- and long-term period of time.

Taking into account that the construction materials applied outside the buildings are currently exposed to aggressive atmospheres due to increased pollution, the analysis of their behavior against these atmospheres, simulated laboratorially, allows us obtaining data that, when analyzed with the proper techniques of statistical prevision modeling, provide us a precious information about their expected behavior over time.

In order to modeling the degradation of five granites used as material construction and ornamental stones exposed to three different acidified solutions (simulation of acid rain), we have applied a polynomial regression analysis to the laboratorial data obtained.

For all the studied granites and for all the acidified solutions it was possible to verify that the pattern of the degradation curve is identical, in an "S" form and with a very high coefficient of determination values, translating a very significant adjustment to this model.

## KEYWORDS:

Degradation Modeling, Polynomial Regression, Granite Decay

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# Session 5

# O aluno como cocriador de valor

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## ABSTRACT

O serviço educativo tem vindo atrair a atenção devido à crescente competição entre as instituições de ensino superior para atrair estudantes (Díaz-Méndez e Gummesson, 2012). Existe uma tendência no setor de ensino superior de adotar estratégias de gestão de marketing orientadas para proporcionar aos alunos valor agregado.

O conceito de valor é amplamente estudado na literatura a partir de diferentes ângulos. McKenna (1991) afirmou que o produto só pode ser considerado de valor para os consumidores se satisfizer as suas necessidades. Mais tarde, alguns autores argumentam que o valor é criado por meio de uma combinação de recursos que geram inovação (p.e., Allen, 2005). Outros estudos enfocam o papel ativo dos consumidores na criação de valor (Bendapudi e Leone, 2003). Também a perspectiva da experiência tida pelo consumidor tem vindo a ganhar importância, sendo a cocriação considerada pela experiência de uso de produtos ou serviços por parte do consumidor, através da aquisição destes (Gentile et al., 2007).

Atualmente, os últimos desenvolvimentos em serviço, como o Service Dominant Logic (SDL, Vargo e Lusch, 2004, 2008, 2016) abordam o conceito de valor a partir da perspectiva do valor criado em conjunto, denominado como cocriação de valor. Sob esta abordagem, os atores que participam do serviço integram seus recursos no processo de serviço, o provedor oferece uma proposta de valor e o consumidor participa ativamente do valor finalmente obtido. Nesta nova lógica do marketing, não se trata apenas de vender ou produzir bens ou serviços, mas oferecer ao cliente o valor associado à aquisição resultante da interação entre ambos. (Gummesson, 2007).

Para se conseguir a cocriação de valor no ensino superior, é necessário criar o envolvimento dos estudantes (Qian, 2006). Conforme refere Qian (2006), para que exista cocriação de valor no Ensino Superior é necessário a participação dos alunos no desenvolvimento de resultados. Sabemos que no ambiente

educacional a interatividade é fundamental no processo ensino-aprendizagem (Chung e McLarney, 2000). No entanto, este sistema de cocriação já percebido como essencial para o desempenho das Instituições de Ensino Superior, não se aplica muitas vezes, quando o ensino passa por uma simples reprodução de conhecimento, sem qualquer processo de interação.

Neste trabalho pretendemos aplicar a SDL ao ensino superior e analisar como a complexidade do serviço dificulta a aplicação de estratégias tradicionais de marketing e sugere a adoção dessa abordagem teórica inovadora para atingir as metas de gestão das instituições de ensino, como a lealdade dos estudantes.

#### KEYWORDS:

Cocriação de valor, Service Dominant Logic, Ensino Superior.

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# As Vendas Modernas

## Verdade ou Teatralização?

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## ABSTRACT

Com a evolução tecnológica e a proliferação das redes digitais, o Marketing transacional vem sendo progressivamente substituído pelo Marketing Relacional - muito mais próximo e interativo com os seus clientes. Esta nova modalidade promove uma ligação mais vivencial, personalizada, fidelizada e com lealdade ao produto, onde o cliente se torna cocriador e «advogado» da marca. A emergência desta relação, alicerçada em autênticas comunidades tribais, parece estar a pôr em causa o papel do técnico comercial na interação com o cliente.

A Força de Vendas, numa perspetiva de Marketing, para cimentar o seu papel relacional terá, necessariamente, de assimilar as políticas comunicacionais expressas pelo Teatro Moderno. Evidencia, assim, uma maior interação entre o comercial e o cliente, privilegiando a experiência direta de contacto e uma relação humana mais verdadeira.

Este trabalho procura demonstrar a influência do Teatro Moderno, como modalidade de interação, na dinâmica comunicacional da Força de Vendas, numa ótica de Marketing.

## KEYWORDS:

Marketing Relacional, Teatro Moderno, Força de Vendas

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# A Relação entre o Público e o Privado no Século XXI

Uma Nova Pedagogia para as Redes Sociais

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## ABSTRACT

É a partir do século XVIII que desponta uma opinião pública com base na discussão de ideias, partilha de experiência e liberdade de expressão e uma autonomia determinante por parte de um movimento em ascensão que incrementa e impulsiona as ideias expressas pelo movimento iluminista e que, na perspetiva de Habermas, foram fundamentais para a evidente mudança estrutural da esfera pública.

Os espaços de conversação e de partilha vão evoluindo, coadjuvados pela sociedade massificada, através do jornal, rádio, cinema e televisão. E na passagem para o segundo milénio, parece emergir uma nova mudança estrutural da esfera pública, com a migração para o digital, onde se criam autênticas comunidades virtuais que se manifestam através das redes sociais.

Este fenómeno de partilha de ideias e experiências está a criar uma linha tênue entre o espaço público e espaço privado, provocando, por vezes, dificuldades nos internautas, em identificar onde começa um e acaba o outro.

Este trabalho procura analisar a relação entre a esfera pública e privada no contexto digital e evidenciar o papel pedagógico que deverá ser instituído, contra uma autoridade e censura nas redes sociais que persiste em proliferar.

## KEYWORDS:

Opinião Pública, Redes Sociais, Esfera Pública

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# The Education of the Digital generation

## Project AHEAD

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## ABSTRACT

Learning through projects can be seen as a methodology that facilitates the acquisition of new knowledge and at the same time allows the development of new skills that can better prepare students and teachers for the job market. This project, reference number: 609551-EPP-1-2019-1-BG-EPPKA2-CBHE-JP, which we intend to develop in the School of Technology and Management of the Polytechnic Institute of Portalegre, in partnership with other international higher education institutions (Trakia University, Bulgária; State Pedagogical University "Ion Creanga", Moldava; American University of Moldova, Moldava; Odessa National Academy of Food Technologies, Ukraine; National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine, Bialystok University of Technology, Poland and Siauliai State College, Lithuania) targeting students and teachers through innovative training courses in the areas of Science, Technology, Engineering and Mathematics (STEM), and the creation of new courses in these areas.

## KEYWORDS:

Methodologies, Pedagogical Practices, Training

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# Otimização Aerodinâmica de um Dirigível

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## ABSTRACT

A otimização da forma do envelope de uma aeronave mais leve do que o ar (LTA) passa pela determinação dos seus seis coeficientes aerodinâmicos de força e de momento, com recurso à simulação computacional, ou pela sua medição experimental em ensaios de modelo reduzido em túnel aerodinâmico. O conhecimento desses coeficientes é ainda essencial na implementação de modelos de controlo da aeronave. No presente trabalho, determinaram-se experimentalmente os coeficientes de um modelo à escala de 1/13 do dirigível AS800, com 800 mm de comprimento, 18 litros de volume e uma relação diâmetro máximo/comprimento de 0.25, na gama de  $Re \sim 10^6$ , no túnel aerodinâmico do Laboratório de Aeronáutica da Academia da Força Aérea Portuguesa (AFA) em Sintra, equipado com uma balança electrónica de seis componentes e um sistema automático de aquisição de dados. A resposta ao vento relativo foi efectuada para ângulos de guinada de 0 a 180° e complementada com medições da distribuição de pressões ( $c_p$ ) em dois planos longitudinais médios e por visualizações do escoamento com tufo de lã e filetes de fumo, realizadas no Laboratório de Aerodinâmica Industrial (LAIInd) da Universidade do Minho (UM).

As forças e os momentos aerodinâmicos, medidos e registados no referencial da balança, foram posteriormente adimensionalizados, convertidos para os eixos aerodinâmicos, na gama de ângulos de guinada  $\beta$  de - 4 a +180° e de ângulos de ataque  $\alpha = 0, -10$  e +10°, para o envelope nú e equipado com gôndola e superfícies de cauda, e comparados com os existentes para a gama frontal da guinada. Dos ensaios preliminares, apresenta-se a variação em guinada das distribuições de  $c_p$  nas 37 tomadas localizadas ao longo dos meridianos inferior e lateral do modelo, bem como as considerações sobre o comportamento global do escoamento, a partir das visualizações.

## KEYWORDS:

Aerodinâmica, Dinâmica de Fluídos, Dirígivel não Tripulado

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# Poster Session

# BE Aware STudent (BEAST) teachers' academy

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## ABSTRACT

The BEAST teachers' academy was an integral part of the project and took place at the University of Modena Reggio Emilia. Started with an analysis of the knowledge and didactic skills of people taking part in the project. The main objective of the workshop was provide participants with knowledge about innovative methods, techniques and tools that allow students to develop creativity and generate ideas (necessary for planning their careers in the form of personal business models). Was approached: Design Thinking, Visual Thinking, Story Telling. Through the participation in the Academy, teachers increased their competences in the field of modern and effective didactic and project work with students in the field of IT. Competences developed within the framework of the training will not only result in a new quality in the classroom, but also provide high quality of the materials developed within the project. Issues and topics that was addressed at the workshop include: Design Thinking in generating innovative ideas for themselves, sustainable development in project work, modern teaching methods, including taking into account new methods of communication addressed to the Y generation; exchange of international experiences (how to teach in a multicultural environment).

## KEYWORDS:

Skills, Knowledge, Labour Market.

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# A note on the commutativity in models with orthogonal block structure

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## ABSTRACT

Linear mixed models are very useful in Agriculture, Medical research, Economics, Industry, and many others, since in these sciences we are often confronted with correlated data.

In this work we focus on models with orthogonal block structure (OBS), this is, a special class of linear mixed models in which the variance-covariance matrix is a linear combination of the matrices of its principal basis (Nelder, 1965 a,b). Models with orthogonal block structure allow optimal estimation for variance components of blocks and contrasts of treatments, however, aiming to obtain least square estimators that are the best linear unbiased estimators, whatever the variance components, we must impose that the orthogonal projection matrix on the space spanned by the mean vector commute with the matrices of the principal basis, getting a new class of OBS, named COBS (Fonseca,2008). Resorting to B-matrices (Santos, 2012), we address an alternative to the condition presented by Fonseca(2008).

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## KEYWORDS:

B-matrices, Best linear unbiased estimator, Jordan Algebra, Mixed linear models.

## ACKNOWLEDGEMENTS:

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# Inference to Perform a Series of Studies

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## ABSTRACT

The matrices of a structured family of stochastic symmetric matrices are all of the same order  $k$  and correspond to the treatments of a base design  $\pi$ . The most interesting case is when the matrices in the family have a dominant first eigenvalue  $\lambda_1$ . We then study the action of the factors in  $\pi$ , on the components of the first structure vector  $\lambda_1 \alpha_1$  with  $\alpha_1$  the first eigenvector. In this work we consider briefly the models for these matrices and, next, we show how to carry out inference for structured family.

## KEYWORDS:

Structured family, Stochastic symmetric matrices, Base design.

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# Mutual fund and risk investor Evaluation

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## ABSTRACT

This work aim to evaluate the mutual funds individually, as well as to form and to evaluate two portfolios with these funds, taking the investor profile into consideration. To achieve this aim different indicators (profitability level, risk and portfolios diversification) and the Treynor (1965), Sharpe (1966) and Jensen (1968) performance evaluation measures are applied.

The results show that the lower risk funds show a (slightly) lower profitability, more concentrated portfolios and a better performance towards the higher risk funds. When the funds are included in a portfolio context it is the lower risk portfolio that shows a better performance. In this context, it seems that the portfolio managers believe that a lower risk can lead to a better performance and to a higher value creation for the investors. It is still shown the importance of the selection of the benchmark to the performance evaluation.

## KEYWORDS:

Mutual fund; Portfolio; Performance; Risk

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# The CV Guidelines from the 3Economy+

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## ABSTRACT

The CV Guidelines is part of project 3Economy+, more specifically your IO2. Is one tool to allow applicants seeking forms of engagement to link their CV to experiences gained through projects like 3Economy+, other Erasmus+ projects and EU programmes in general when focusing on the building of capacity in relation to economy, marketing and tourism. As a suggestion, part of the CV guidelines could link up automatically the experience listed by the applicant to the codes, websites, project reports, publications, other forms of research, and IT tools (e.g. online maps) that exist online in order to make their references easily checked, verified and expanded upon.

In terms of visual display, the CV Guidelines should allow applicants to be concise, precise and clear. In relation to language, the CV should allow for a diversity of languages to be used, allowing for links between references in different languages.

The CV guidelines should be operable with other EU tools such as ESCO compliance and Europass. It should also address the recognition and framework provided by the European Qualification Framework. Competences should be related to European frameworks of competences, such as ENTRECOMP for entrepreneurial skills and DIGICOMP for digital skills.

## KEYWORDS:

Skills, Knowledge, Labour Market.

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# A importância da arte terapia na intervenção de alunos com Perturbação de Hiperatividade com Défice de Atenção

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## ABSTRACT

A Perturbação da Hiperatividade e Défice de Atenção - PHDA, pode ser encarado, a nível familiar, em perspetivas diferentes, se por um lado, pode ser um verdadeiro desafio para os pais, por outro, poderá ser uma forma do jovem aprender a lidar consigo próprio, a descobrir a sua autonomia, autocontrolo e, principalmente, os seus limites. Neste sentido será um maior desafio para o próprio Jovem, na medida em que a descoberta entrará em conflito com as dificuldades que poderão surgir ao longo da sua aprendizagem e vivências do dia a dia.

Apresenta-se ao longo deste estudo, o conceito de PHDA, bem como as suas características, tendo o mesmo como objetivo, perspetivar a importância da Arte Terapia no desenvolvimento dos jovens com esta perturbação.

Assim, o objetivo primordial deste estudo/hipótese, é confirmar-se ou não, se a Arte Terapia será um instrumento adequado, utilitário e resolutivo, para que os docentes o possam implementar no processo de ensino aprendizagem, por forma a que alunos nesta condição obtenham sucesso, tanto do ponto de vista cognitivo, social e principalmente emocional. Para além, também de sensibilizar os docentes para uma problemática que vai muito além do desassossego, da inquietação e, até da própria agressividade, que muitas das vezes é associada estes alunos, propõe-se neste aspeto solucionar ou dar uma resposta alternativa, através da Arte Terapia.

A Arte terapia proporciona através de atividades expressivas uma série de benefícios para os que dela usufruem, o que poderá permitir satisfação no ato de criar, ou ser um caminho para a liberdade de autocriação e de espontaneidade, levando à superação de preconceitos internos, e não deixando de ser, ao mesmo tempo, uma forma de conhecimento de outros meios de expressão e de comunicação para além dos verbais. Tudo isto, em virtude de onde se poderem efetuar várias experimentações, sem quaisquer pressões, conseguindo-se através da criatividade estabelecer uma relação transferencial entre o aluno e o professor.

A prática pedagógica em jovens com PHDA, com base na arte terapia, permite o desenvolvimento de capacidades sociais, que são de facto um dos seus pontos fracos.

**KEYWORDS:**

Aprendizagem, Arte Terapia, Défice de Atenção, Hiperatividade.

# High performance computing training

## Advancing science and increasing the competitiveness of SMEs by using supercomputer facilities

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## ABSTRACT

Over the last decade there has been an increasing interest in high performance computing (HPC) for solving complex problems and performing research activities through computer modelling, simulation and data analysis (high performance data analytics; HPDA) through the availability of supercomputer facilities. Taking advantage of HPC resources in scientific computations and Big Data analytics requires a long and continuing training of Human Resources due to the steep learning curve associated to HPC.

However, the number of students and staff members at high education institutions (HEIs) that get involved into HPC do not follow this growth. This stems from the lack of nationwide policies and funding for training (of students and staff) and use of HPC resources either at their home institutions or at supercomputer facilities. Students and staff become involved in HPC only when there is a specific need to develop/adapt some software to run in parallel. Some of these people become users of large machines by applying to computing time, but this number in general is very small. By understanding these issues and that HPC is crucial to the advance of science and the competitiveness of SMEs in Europe, the European Commission launched the European Digital Programme (June 2018) to, among others, promote training and develop HPC competences and skills throughout European countries.

In this talk I'll discuss these issues and how to promote training on HPC at all levels in the academia (students in the different teaching cycles, teaching and non-teaching staff at different levels of their careers) and industry.

## KEYWORDS:

High performance computing, high performance data analytics, training

# Reasoning about data: a focus on graphing

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## ABSTRACT

Visual displays are often used to communicate information in everyday life, in technical reports and in research. Statistical graphs, elaborated using computer tools, are widely used by students of higher education as a foundation for academic and research work, so it is imperative that the level of statistical literacy of these students allows them to read and interpret these visual representations appropriately, to communicate data from their work effectively.

In the curricular units that we teach in higher education, we often find students who have not previously acquired basic statistical skills and who reveal great difficulty in extracting information expressed in graphs. There are several warnings in the literature that reading charts, even the simplest ones, is difficult for many people (e.g. Glazer, 2011). One of the factors suggested for the difficulty in interpreting statistical graphs is related to the specificity of statistical thinking, which "being an artifact of civilization, not part of our natural neural equipment" (Moore, 1998, pp.1257), requires to be learned and exercised.

In this work, we analyse a task of interpretation of a bar graph, developed in the classroom, which was one of the instruments used to identify difficulties and misconceptions that students present in reading and interpreting statistical graphs.

## KEYWORDS:

Bar graph, statistical information, statistical thinking.

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# Adaptation of Higher Education to the Digital Generation Submitted Project

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## ABSTRACT

The joint Council and Commission report 2015 on the implementation of the strategic framework for European cooperation in education and training "Education and teaching 2020" notes that "... good education and teaching help to promote sustainable economic growth, as well as sustainable development: they are the driving force behind research, innovation, productivity and competitiveness. " and it is necessary to revise higher education policy to increase incentives for teaching. This is confirmed by the accepted on 30.5.2017 communication from the Commission to the European Parliament, the new initiatives "Investing in Youth of Europe" and "Digital Skills and Jobs Coalition". Teachers at high academic schools are engaged not only in teaching and administrative activities, but also in conducting research work. The rapid development of technologies and the insufficient time to increase personal qualifications lead to their lagging behind with modern methods of education and organization of research.

With the implementation of this project, Partners have set themselves the goal of proposing solutions to these issues, to be implemented in each partner organization and assessing their viability. An innovative lifelong learning model for the "digital" students will be developed; will provide measures to increase their motivation to study STEM and ICT specialties, to adequately assess the competences acquired and to adopt uniform standards corresponding to the European Qualifications Framework for Lifelong Learning and Standards and Guidelines for Quality Assurance in the European Higher Education Area. Teacher trainings will be conducted to enhance their STEM technology competencies and innovative courses with their application that they will be able to apply in teaching and scientific activities.

## KEYWORDS:

Methodologies, Pedagogical Practices, Training

## REFERENCES:

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# Education for Sustainability

## A contribution from design methods

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## ABSTRACT

The poster will present a perspective on the kind of contribution that design methods can have in the context of education for sustainable development, based on circular economy principles.

It is based on the realization that design, as a discipline, with its knowledge and methods, can make a relevant contribution in the definition of the road to circularity and sustainability, based on education.

In the midst of design, and with specific links to the philosophy, logic and language of circular economy, a "Circular Design Guide"<sup>1</sup> was recently edited, resulting from an initiative of the Ellen MacArthur Foundation<sup>2</sup> and IDEO<sup>3</sup>. It takes the form of a website and offers not only a framework of the proposed values but also a set of possible methods to explore in the development of circular design projects, some of them specifically intended for students.

Other source to explore is the "Design Method Toolkit",<sup>4</sup> developed by the Digital Society School of the Amsterdam University of Applied Sciences.<sup>5</sup> This toolkit is "Agile based" and has no specific connections to circularity. The "digital society" framework seems adequate when considering an education scenario of today.

With these references in mind, the poster will emphasize some possibilities of design methods applicable to education for sustainability that seem adequate to explore locally.

## KEYWORDS:

Design methods, Circular economy, Education for sustainability

## REFERENCES:

<sup>1</sup> <https://www.circulardesignguide.com/>

<sup>2</sup> <https://www.ellenmacarthurfoundation.org/>

<sup>3</sup> <https://www.ideo.com/eu>

<sup>4</sup> <https://toolkits.dss.cloud/design/>

<sup>5</sup> <https://digitalsocietyschool.org/>

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