

2022

Held at the University
of Porto, Portugal
July 07-10, 2022



Organised by IAFOR in partnership with the University of Porto, the ID+/Research Institute for Design, Media and Culture, and the IAFOR Research Centre at OSIPP, Osaka University, Japan

ecade

The European Conference on Arts, Design & Education

PROGRAMME & ABSTRACT BOOK

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University of Belgrade



Alfred University



IAFOR has entered into a number of strategic partnerships with universities across the world to form the IAFOR Global Partnership Programme. These academic partnerships support and nurture IAFOR's goals of educational cooperation without borders, connecting the organisation with institutions that have an international and internationalising profile, and a commitment to interdisciplinary research. The IAFOR Global Partnership Programme provides mutual recognition and scope for Global Partner institutions and organisations to showcase their research strengths, as well as engage in the development of projects and programmes with IAFOR.



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States



Eliana Penedos-Santiago

ID+ / Unexpected Media Lab, University
of Porto & Polytechnic Institute of Leiria,
Portugal

Letter of Welcome



Dear Friends and Colleagues,

Bem vindo ao Porto!

Welcome to the European Conference on Arts, Design & Education (ECADE2022), and to the historic city of Porto!

Held by IAFOR in partnership with the University of Porto, the ID+/ Research Institute for Design, Media and Culture, and the IAFOR Research Centre at OSIPP, Osaka University, Japan, ECADE2022 will explore and share how art, design and education together can have an impact, make a societal difference, and contribute to the economy and how we think, live, work, and learn.

As we emerge from the pandemic, and face climate emergency, this is a unique opportunity to review our values, and thus renew our sense of citizenship, and what constitutes the 'common good' both locally and globally.

Our conference will look at how design shapes and mediates ideas, how the visual arts challenge and question our perceptions, and how education seeks ways to develop our shared understanding and our skills, to listen, and to find different ways to speak and to act together.

In focusing on the difference we make and hope to make, we welcome contributions from designers, artists and educators, but importantly also from the voices of others, from partners and collaborators, from those who are users, beneficiaries and audiences whether from other disciplinary communities, (computer science, sociology, anthropology, engineering, economics or geography) or from beyond academia, from entrepreneurs, policy makers, medical or health specialists, local businesses or community groups. The conference recognises that such cross-sector participation can help us understand not only how we produce and disseminate, but perhaps more critically in building a dialogue, how we are received and perceived.

It is always both exciting and nerve racking to be launching a new conference in a new venue, and yet it has been wonderful to work with the University of Porto and the highly engaged conference organizing committee, and I would like to acknowledge their great effort in putting together a highly compelling programme. In Porto, my thanks go to the members of the Organising Committee based locally, and notably to Heitor Alvelos, Susana Barreto, Cláudia Raquel Lima, Eliana Penedos-Santiago, as well as to IAFOR international advisers, Anne Boddington (Kingston University, United Kingdom), Donald E. Hall (University of Rochester, United States), and Michael Menchaca (University of Hawai'i at Manoa, United States). My recognition also to Álvaro Ferreira at the University of Porto for his help in facilitating the event.

I would like to thank the keynote and plenary speakers, as well as to the different presenters coming from many countries around the world. The dialogue and the conference promises to be richly engaging, and the venue wonderful.

I encourage your very active participation in the event, both onsite and online, and look forward to meeting you all.

Dr Joseph Haldane

Chairman & C.E.O, The International Academic Forum (IAFOR)

Guest Professor, Osaka School of International Public Policy (OSIPP), Osaka University, Japan

Visiting Professor, Doshisha University, Japan & The University of Belgrade, Serbia

Member, Expert Network, World Economic Forum



July 07 | All times are Western European Summer Time (UTC+1)

Thursday at a Glance

- | | |
|-------------|--|
| 12:45-13:30 | Conference Registration Room 100e |
| 13:30-13:45 | Announcements & Welcome Address Room 101 & Online
Joseph Haldane, IAFOR, Japan
Heitor Alvelos, University of Porto, Portugal |
| 13:45-14:30 | Keynote Presentation Room 101 & Online
<i>Beyond a Dialogue between the Sciences and the Arts in Times of Uncertainty</i>
Manuel Heitor, Center for Innovation, Technology and Policy Research, IN+/IST – University of Lisbon;
former Minister for Science, Technology and Higher Education, Government of Portugal |
| 14:15-14:30 | Keynote Session Q&A
Heitor Alvelos, University of Porto, Portugal (Moderator) |
| 14:30-15:15 | Keynote Presentation Room 101 & Online
<i>Design and Technology in Online Spaces: Health, Work, Education and the Future</i>
Michael Menchaca, University of Hawai'i at Manoa, United States |
| 15:00-15:15 | Keynote Session Q&A
Anne Boddington, Kingston University, United Kingdom (Moderator) |
| 15:15-16:00 | Coffee Break & Poster Session Room 100e |



July 07 | All times are Western European Summer Time (UTC+1) Thursday at a Glance (Cont'd)

- | | |
|--------------------|---|
| 16:00-17:00 | Featured Panel Discussion Room 101 & Online
<i>Research Integrity: Replicability and Reproducibility in Art & Design Research</i>
Anne Boddington, Kingston University, United Kingdom
Heitor Alvelos, University of Porto, Portugal
Susana Barreto, University of Porto, Portugal (Moderator) |
| 17:00-17:15 | Conference Photograph Room 101 |
| 17:15-17:45 | Port Wine Tasting Room 100e |
| 18:30-19:30 | Conference Welcome Reception in Downtown Porto |



July 08 | All times are Western European Summer Time (UTC+1) Friday at a Glance

- | | |
|-------------|---|
| 09:30-10:00 | Keynote Presentation Room 101 & Online
<i>How a Local Knowledge Network can Impact the Generation of Economic and Social Value within the Community</i>
Clara Gonçalves, Inductiva Research Labs, Portugal |
| 10:00-10:30 | Keynote Presentation Room 101 & Online
<i>Viability and Sustainability of Creative Practices, Crafts and Traditional Industry Sectors</i>
Lynn Sayers-McHattie, Glasgow School of Art, United Kingdom |
| 10:30-10:40 | Keynote Sessions Q & A
Anne Boddington, Kingston University, United Kingdom (Moderator) |
| 10:40-11:00 | Coffee Break Room 100e |
| 11:00-12:15 | Onsite Parallel Session 1
Room 111: Learning Practices in Art & Design Education
Room 113: Design for Society
Room 115: Archiving & Preservation of Design and Data |
| 12:15-12:30 | Coffee Break Room 100e |
| 12:30-13:20 | Onsite Parallel Session 2
Room 111: Teaching and Learning the Arts (Workshop)
Room 113: Teaching and Learning the Arts (Workshop)
Room 115: Culture & Heritage |
| 13:20-14:20 | Lunch Break Room 100e |



July 08 | All times are Western European Summer Time (UTC+1) Friday at a Glance (Cont'd)

14:20-15:10

Onsite Parallel Session 3

Room 111: Design and New Media

Room 113: Promoting Cultural Heritage in Art and Design (Workshop)

Room 115: Visual Arts Practices

15:10-15:25

Coffee Break | Room 100e

15:25-16:40

Onsite Parallel Session 4

Room 111: Learning Practices in Art & Design Education

Room 113: Art and Design Education for Sustainable Development

Room 115: Culture & Heritage /Interdisciplinary Local Art
& Design History

16:40-16:50

Break

16:50-17:40

Onsite Parallel Session 5

Room 111: Interdisciplinary Art & Design Projects (Panel)

Room 113: Academic Practices Outside the Classroom (Workshop)



July 09 | All times are Western European Summer Time (UTC+1) Saturday at a Glance

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|--------------------|---|
| 09:30-10:00 | Keynote Presentation Room 101 & Online
<i>Against the Method: Recovering the Senses in the Age of Hyperformatting</i>
Mirian Nogueira Tavares, University of the Algarve, Portugal |
| 10:00-10:30 | Keynote Presentation Room 101 & Online
<i>Experiential Knowledge + Science + Art
= Creative Ethnographic Drawing</i>
Susana de Noronha, Centre for Social Studies,
University of Coimbra, Portugal |
| 10:30-10:40 | Keynote Sessions Q&A Room 101 & Online
Cláudia Raquel Lima, ID+ / Unexpected Media Lab
– Faculty of Fine Arts, University of Porto; Lusófona University,
Portugal (Moderator)
Eliana Penedos-Santiago, ID+ / Unexpected Media Lab – Faculty
of Fine Arts, University of Porto; Polytechnic Institute of Leiria,
Portugal (Moderator) |
| 10:40-11:00 | Coffee Break Room 100e |
| 11:00-12:40 | Onsite Parallel Session 1
Room 111: Interdisciplinary Art & Design Projects
Room 113: Strategies for Promoting Creative Thinking
Room 115: Research Methods in Art and Design |
| 12:40-13:40 | Lunch Break Room 100e |



July 09 | All times are Western European Summer Time (UTC+1) Saturday at a Glance (Cont'd)

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|--------------------|---|
| 13:40-14:30 | Onsite Parallel Session 2
Room 111: Design & Local Industries
Room 113: Interdisciplinary Arts & Education
Room 115: Strategies for Promoting Cultural Sustainability |
| 14:30-14:35 | Short Break |
| 14:35-15:25 | Onsite Parallel Session 3
Room 111: Design for Society
Room 113: Interdisciplinary Arts & Education
Room 115: Academic Practices Outside the Classroom |
| 15:25-15:40 | Coffee Break Room 100e |
| 15:40-16:25 | Keynote Presentation Room 101 & Online
<i>The Attention Economy</i>
Jon Wozencroft, Touch, United Kingdom |
| 16:10-16:25 | Keynote Q&A
Heitor Alvelos, University of Porto, Portugal (Moderator) |
| 16:25-16:40 | Onsite Closing Session
Joseph Haldane, IAFOR, Japan |



July 10 | All times are Western European Summer Time (UTC+1)

Sunday at a Glance

10:00-10:50	Online Parallel Session 1 Room A: Strategies for Promoting Creative Thinking Room B: Academic Practices Outside the Classroom
10:50-11:00	Break
11:00-12:15	Online Parallel Session 2 Room A: Learning Practices in Art & Design Education Room B: Interdisciplinary Arts & Design for Society
12:15-12:25	Break
12:25-14:05	Online Parallel Session 3 Room A: Culture & Heritage Room B: Interdisciplinary Arts & Design
14:05-14:15	Break
14:15-15:30	Online Parallel Session 4 Room A: Learning Practices in Art & Design Education Room B: No presentations
15:30-15:45	Online Closing Session Joseph Haldane, IAFOR, Japan



Presentation Guide

Oral & Workshop Presentations

Oral Presentations are normally scheduled in sessions comprising three presentations, lasting 75 minutes in total. In sessions with two Oral Presentations, the session will last 50 minutes, and in the case of four Oral Presentations, an extended session lasting 100 minutes will be scheduled. The time in the sessions is to be divided equally between presentations. We recommend that an Oral Presentation should last 15–20 minutes to include time for question and answers, but should last no longer than 25 minutes. Any remaining session time may be used for additional discussion. Workshop Presentations will last 50 minutes.

Equipment

All rooms will be equipped with a MacBook computer pre-installed with PowerPoint and Keynote and connected to a LCD projector or LCD screen. If you wish, you may directly link your own PC laptop, although we advise you to use the computer provided by plugging in your USB flash drive. We recommend that you bring two copies of your presentation in case one fails, and suggest sending yourself the presentation by email as a third and final precaution.

Session Chairs

Session Chairs are asked to briefly introduce themselves and other speakers using the provided printout of speaker bios, hand out the provided presentation certificates at the end of the session, ensure that the session begins and ends on time, and that the time is divided fairly between the presentations. Each presenter should have no more than 25 minutes in which to present his or her paper and respond to any questions. The Session Chair is asked to assume this timekeeping role.

Please follow the order in the programme, and if for any reason a presenter fails to show up, please keep to the original time slots as delegates use the programme to plan their attendance.

Presentation Certificates

Presenters at the venue will receive a certificate of presentation from their Session Chair or a member of staff at the end of their session. Live-stream and Virtual Presenters will receive a certificate of presentation after the conference.



Conference Proceedings

IAFOR Conference Proceedings are Open Access research repositories that act as permanent records of the research generated by IAFOR conferences. The Conference Proceedings are published on the IAFOR Research Archive (papers.iafor.org). All accepted authors who present at the conference may have their full paper published in the online Conference Proceedings.

Full text submission is due by August 10, 2022, through the online system. The proceedings will be published on September 12, 2022.

Conference Catch-up

All live-streamed sessions will be recorded and uploaded to the Conference Catch-up page (video-on-demand) via Vimeo. The catch-up page will be publicly available after the conference.

Pre-Recorded Virtual Presentations & Virtual Poster Presentations

A full list of pre-recorded virtual video presentations and virtual poster presentations will be on the conference website during and after the conference. We encourage you to watch these presentations and provide feedback through the video comments.



Become an IAFOR Member

IAFOR provides an excellent personal and professional environment for academics and scholars of all ages and backgrounds to come together and exchange the latest ideas, and inform each other's perspectives through their own cultural and disciplinary background and experiences. We are able to do this thanks to the exceptional network of individuals and institutions around the world who support our work and help shape our exceptional events globally. We emphasise the nurturing and supporting of young academics from different backgrounds, providing mutual advice and guidance, and offer more senior academics the chance to forge working relationships outside of their traditional networks.

In a world where division and strife are underlined and played up in national and local contexts, and political posturing frequently seeks to ostracise and demonise, IAFOR is committed to working across cultural and national borders, and to work to bring people together. We believe that mature human interaction and academic and cultural exchange are essential to offering positive versions of the future, where cooperation happens with individuals and institutions who share a commitment to bridge divides, to being good global citizens, and to making the world a better place.

By becoming a member, you will become a stakeholder in the IAFOR mission of facilitating international exchange, encouraging intercultural awareness, and promoting interdisciplinary discussion in the hope and expectation of generating and sharing new knowledge. Join us now in this growing global organisation, and help make a difference today.

To learn more about IAFOR membership, please visit:

www.iafor.org/membership

Introduction

IAFOR's publications provide a constructive environment for the facilitation of dialogue between academics at the intersections of nation, culture and discipline. Since 2009, when the organisation was established, over 20,000 academics have presented their research at IAFOR conferences – a wealth of ideas have been generated and partnerships formed. Our various publications, from Conference Proceedings, to peer-reviewed journals, to our online magazine, provide a permanent record of and a global online platform for this valuable research. All of our publications are Open Access, freely available online and free of publishing fees of any kind. By publishing work with IAFOR, authors enter into an exclusive License Agreement, where they have copyright, but license exclusive rights in their article to IAFOR as the publisher.

Conference Proceedings

As a presenter at an IAFOR conference you are encouraged to submit a final paper to our Conference Proceedings. These online publications are Open Access research repositories, which act as a permanent record of the research generated at IAFOR conferences. All of our Conference Proceedings are freely available to read online. Papers should be uploaded through the submission system before the Final Paper Submission Deadline, which is one month after the end of the conference. Please note that works published in the Conference Proceedings are not peer-reviewed and cannot be considered for publication in IAFOR journals.

IAFOR Journals

IAFOR publishes several editorially independent, Open Access journals across a variety of disciplines. They conform to the highest academic standards of international peer review, and are published in accordance with IAFOR's commitment to make all of our published materials available online.

How are papers submitted?

Submissions should be original, previously unpublished papers which are not under consideration for publication in any other journal. All articles are submitted through the submission portal on the journal website and must conform to the journal submission guidelines.

How does IAFOR ensure academic integrity?

Once appointed by IAFOR's Publications Committee, the Journal Editor is free to appoint his or her own editorial team and advisory members, who help to rework and revise papers as appropriate, according to internationally accepted standards. All papers published in the journal have been subjected to the rigorous and accepted processes of academic peer review. Neither editors nor members of the editorial team are remunerated for their work.

Where are the journals indexed?

IAFOR Journals are indexed in Scopus, DOAJ, ERIC, MIAR, TROVE, CiteFactor and EBSCO, SHERPA/ROMEO and Google Scholar. DOIs are assigned to each published issue and article via Crossref. Please note that indexing varies from journal to journal.

What's the reach?

Each of our journal issues is viewed thousands of times a month and the articles are frequently cited by researchers the world over, largely with thanks to our dedicated marketing efforts. Each issue is promoted across our social media platforms and to our tailored email marketing lists. On average, each journal publishes biannually.

Selected IAFOR Journals are available for purchase on Amazon. Search for The International Academic Forum (IAFOR).

What's the cost?

IAFOR Journals are Open Access publications, available online completely free of charge and without delay or embargo. Authors are not required to pay charges of any sort towards the publication of IAFOR Journals and neither editors nor members of the editorial boards are remunerated for their work.

How are IAFOR Journals related to IAFOR Conferences and Conference Proceedings?

IAFOR Journals reflect the interdisciplinary and international nature of our conferences and are organised thematically. A presenter can choose to publish either in Conference Proceedings or submit their manuscript to the corresponding IAFOR Journal for review.

Current IAFOR Journal titles include

IAFOR Journal of Arts & Humanities

IAFOR Journal of Cultural Studies

IAFOR Journal of Education

IAFOR Journal of Literature & Librarianship

IAFOR Journal of Psychology & the Behavioral Sciences

THINK

THINK, The Academic Platform, is IAFOR's online magazine, publishing the latest in interdisciplinary research and ideas from some of the world's foremost academics, many of whom have presented at IAFOR conferences. Content is varied in both subject and form, with everything from full research papers to shorter opinion pieces and interviews. *THINK* gives academics the opportunity to step outside of the traditional research publishing status quo – to get creative, explore different disciplines and to have their ideas heard, shared and discussed by a diverse, global audience.

For more information on *THINK* please visit www.think.iafor.org

If you would like more information about any of IAFOR's publications, please contact publications@iafor.org

Academic Grant & Scholarship Recipients

Our warmest congratulations go to Dimas Rifqi Novica and Naa Omai Sawyerr who have been selected by the Organising Committee to receive grants and scholarships to present their research at the conference.

IAFOR's grants and scholarships programme provides financial support to PhD students and early career academics, with the aim of helping them pursue research excellence and achieve their academic goals through interdisciplinary study and interaction. Awards are based on the appropriateness of the educational opportunity in relation to the applicant's field of study, financial need, and contributions to their community and to IAFOR's mission of interdisciplinarity. Scholarships are awarded based on availability of funds from IAFOR and vary with each conference.

Find out more about IAFOR grants and scholarships: [**www.iafor.org/financial-support**](http://www.iafor.org/financial-support)

Dimas Rifqi Novica | IAFOR Scholarship Recipient

63466 - Pre-Recorded Virtual Presentation

Drawing and Ideation Process at Design Education: A Systematic Literature Review

Dimas Rifqi Novica is a lecturer at Animation major in Art and Design Department, Universitas Negeri Malang, Indonesia. Dimas has a Bachelor of Art degree from Universitas Negeri Malang, Indonesia and pursued further education in Master of Design from Institut Teknologi Bandung, Indonesia. His works mainly focus on design for animation/ video games. He is actively involved in several character design exhibitions, one of his recent works is redesigning Punakawan (local folklore from Indonesia). Currently, Dimas is doing a PhD in Design at University of Lisbon, Portugal focusing on Design Education of Animation Students

Naa Omai Sawyerr | IAFOR Scholarship Recipient

Dr Naa Omai Sawyerr is a lecturer with over 10 years of experience and currently works at the Department of Textile Design and Technology, Takoradi Technical University, Takoradi, Ghana. In 2019 she was awarded a PhD in Family and Consumer Sciences (Clothing and Textiles) from the University of Ghana, Legon, Ghana. Her research interest includes indigenous African textiles, traditional craft making, product quality and consumer behaviour.

63727 - Pre-Recorded Virtual Presentation

Symbolism of Selected Wax Prints in West Africa

Thursday, July 07

Plenary Session

All times are in Western European Summer Time (UTC+1)

Abstracts appear as originally submitted by the author. Any spelling, grammatical, or typographical errors are those of the author.

Keynote Presentation: Manuel Heitor

Beyond a Dialogue between the Sciences and the Arts in Times of Uncertainty:

Understanding “Human Agency” and the Need to Guarantee Responsible, People-centred and Climate-aware Systems for our Common Good in a Decentralised and AI Driven Digital Age

Thursday, July 07 | 13:45-14:30 | Room 101 & Online

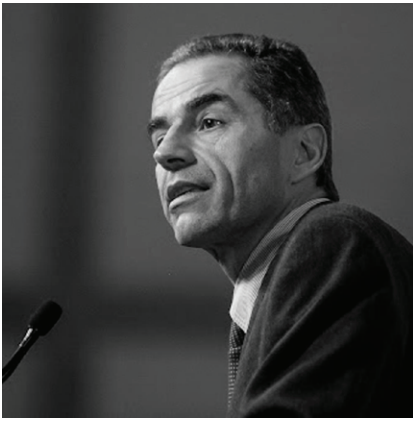
This lecture relies on the hypothesis that current challenges associated with increasing uncertainties of modern western societies must lead us to safer, cleaner and more resilient forms of digital governance and forms of institutional innovation that must necessarily be centred on people but, above all, be oriented through our collective knowledge. Recent unexpected threats to our common safety and public goods, including public health, such as the COVID-19 pandemic, the increasing activity of individual digital terrorism or the Russian invasion of Ukraine, have shown that our societies are not as safe as we thought. In association with other recent political decisions and movements, such as Brexit among many other nationalistic movements and trends, we are facing unprecedented threats that should foster a clear call for action.

Evolving forms of technology governance, including the regulation of digital platforms and digital standards, should be oriented to promote “digital humanism” and guarantee a transdisciplinary approach to collective behaviours and the consideration of “human agency”. They should ensure that citizens, at large, have better knowledge of digital services and digital providers, together with improved user responsibility in an emerging decentralised digital age and AI-enabled innovations. Although most of the current debate is dominated by new technological advancements of products and services in the financial industry (i.e., Fintech), as well as related issues associated with blockchain in the context of cryptocurrencies, the acceleration of decentralisation and AI affects a quite diversified set of actors and sectors of activity and all of our daily life, from industry and critical infrastructures to the arts (e.g., NFTs, non-fungible tokens).

We focus this lecture on the need to guarantee our collective responsibility towards carbon neutrality, avoiding a climate disaster, as well as promoting our global safety. This requires new research on emerging forms of knowledge production and diffusion, together with the need to understand “collective behaviours” through new transdisciplinary approaches, moving beyond a dialogue between the sciences and the arts. Above all, these issues should contribute definitely to technology governance of decentralised digital networks and an increasingly massified use of AI.

A few case studies are provided, including sustainable land management for carbon neutrality, the preservation of coastal areas and the protection of space assets in the era of “New Space”.

Empowering users and citizens, at large, will promote the need to educate and train every single citizen, while ultimately avoiding dominant economic or political interests, as well as digital terrorism and related individual malfunctions. The rules of governance must boost research and innovation, foster growth and competitiveness and help smaller companies and start-ups to compete with very large players, in particular those who have the ability to copy their features, acquire them or block their business. New governance models must facilitate access and use of data by consumers, while providing incentives for them to invest in ways to generate value through data in association with “human agency”. It includes the combination of anonymized data from different sources to produce new and valuable insights and services. In addition, rules should evolve in a way to fight against “mendacity” and, in contrast, to foster “fact-checking”. Also, to promote safeguard situations of illegal transfer of data without notification, for example by the “cloud” service provider without traceability, while promoting the development of interoperability standards so that data is reused across sectors.



Manuel Heitor

Manuel Heitor was born in September 1958. He is a Full Professor at the Instituto Superior Técnico, University of Lisbon, at the Center for Innovation, Technology and Policy Research, IN+/IST, and holds a PhD from Imperial College London in Mechanical Engineering (Experimental Combustion, 1985).

He did postdoctoral studies at the University of California, San Diego, 1986, and later pursued an academic career at the Instituto Superior Técnico, Lisbon, where he started his research

activity in the area of energy and environment, with emphasis on Fluid Mechanics and Experimental Combustion.

He served as Deputy President of the Instituto Superior Técnico between 1993 and 1998, and since the early 1990s has been devoted to the study of science, technology and innovation policies, including higher education policies and management. In 1998 he founded the Center for Innovation, Technology and Policy Research, IN+, of IST, which was named in 2005 as one of the Top 50 global centres of research on Management of Technology, by the International Association for the Management of Technology, IAMOT.

He has coordinated, among others, IST's PhD programmes in Engineering and Public Policy and in Engineering Design and Advanced Manufacturing Systems. He was Research Fellow at the University of Texas at Austin, at the IC2 Institute, Innovation, Creativity and Capital, and during the academic year 2011/12 he was Visiting Professor at Harvard University, both in the United States of America.

He was Minister for Science, Technology and Higher Education in the Government of Portugal from 2015-2022 and Secretary of State for Science, Technology and Higher Education between March 2005 and June 2011. He served for more than 12 years in the Government of Portugal.

Keynote Presentation: Michael Menchaca

Design and Technology in Online Spaces: Health, Work, Education and the Future

Thursday, July 07 | 14:30-15:15 | Room 101 & Online

Conventional wisdom and popular media typically focus on the more negative facets of the online world: isolation, poor infrastructure, challenges with student learning, and too many Zoom meetings. However, the reality is that online technology has provided an alternate outcome to an even more potentially disastrous reality. This was no accident. Programmers and designers have tinkered for years to create robust online spaces that support health, the workplace, and especially education. The calamitous times of the pandemic only emphasize the utility and necessity of these spaces. In this talk, I will highlight some of the important work supporting the design and implementation of online spaces, including in areas of health, work, and education. I will also briefly talk about what designers envision for the future.

For health, data indicate that distance technology likely saved lives and lowered exposure. I will review some of the important advances in telemedicine and remote learning that allowed for managing risk during the pandemic. In the workforce, beyond just managing exposure, telework has transformed how we work and many companies continue to provide permanent options. Most significantly, in education, exposure to remote teaching has led to purposeful, design-based learning that has transformed learning experiences in all areas: primary, secondary, post-secondary, training, and even informal.

However, each of these areas still faces significant challenges, including patient experiences, working abroad, tax implications, infrastructure, and even global collaboration. But rather than allow such challenges to inhibit progress, we can rely on purposeful design and both fiscal and human investment for success. I will outline some of the major challenges in each of the areas discussed and conclude with a focus on how purposeful design and futurist thinking can help build back better in a post-pandemic future. In short, I will show how we can embrace online spaces and not lament how we have been forced to rely on them.



Michael Menchaca

Michael Menchaca is Chair of the Department of Learning Design and Technology at the University of Hawai'i at Manoa. He specialises in distance education, and has designed, implemented, and coordinated online and hybrid programs for over 20 years. He serves as editor for the *IAFOR Journal of Education: Technology in Education* Edition. He was an IT specialist for many years in the public and private sector. He teaches and conducts research in the areas of online learning, technology integration, and social justice with technology.

**Featured Panel: Anne Boddington, Heitor Alvelos & Susana Barreto
(Moderator)**

Research Integrity: Replicability and Reproducibility in Art & Design Research

Thursday, July 07 | 16:00-17:00 | Room 101 & Online

Research Integrity is a growing concern worldwide. It addresses both the behaviours, conduct and professionalism of researchers as well as how others have confidence and trust in the methods, findings, and insights of any publicly funded academic research.

This discussion will explore how many current research frameworks in which art and design researchers are working trend towards universality and to a 'one size fits all' construction of research. In practice, art and design research methodologies embrace and draw from medicine, health, and physical sciences to more interpretive realms of the social sciences and humanities that are by definition, contextual and culturally determined, and where the language of replicability and reproducibility may require reflection and nuance while also maintaining academic integrity and public trust in the research conducted and its findings.



Anne Boddington

Anne Boddington is Professor of Design Innovation, Pro Vice Chancellor for Research, Business and Innovation at Kingston University in the UK and recently appointed as the Sub Panel Chair for Art & Design: History, Practice & Theory for the UK's Research Excellence Framework (REF) 2021. Professor Boddington has extensive experience of the leadership, management and evaluation of art and design education and art and design research in higher education across the UK and internationally. She is an experienced chair and has held trustee and governance roles across the creative and cultural sector including as trustee

of the Design Council, an independent Governor, Fellow of the Royal Society of Arts (RSA), an affiliate member of the Royal Institute of British Architects (RIBA), a member of the executive of the Council for Higher Education in Art & Design (CHEAD) and a member of the advisory board of the Arts & Humanities Research Council. She has an international reputation in creative education and research and has been a partner, a collaborator, a reviewer and evaluator for a wide range of international projects and reviews across different nations in Europe, the Middle East, Southern and East Asia and North America.



Heitor Alvelos

Heitor Alvelos is Associate Professor at the University of Porto, where he directs the PhD Program on Design and the Unexpected Media Lab at the ID+ Research Center for Design, Media & Culture. He is currently Chairman of the Scientific Board for Humanities & Social Sciences at the Foundation for Science & Technology, Executive Board Member of the European Academy of Design, and a Member of Academia Europaea. Heitor has spoken as a conference keynote and professor at academic and business institutions around the world, and has also provided consultancy for the Portuguese Ministry of Science, the UK Arts & Humanities Research Council, and the EU Commission's New European Bauhaus (on behalf of Portugal).

Heitor curated the FuturePlaces Media Lab for Citizenship from 2008 to 2017 (with the University of Texas at Austin), and has recently completed the coordination of the FCT/H2020 project "Anti-Amnesia: Design Research as an Agent for Narrative and Material Regeneration and Reinvention of Vanishing Portuguese Manufacturing CVultures and Techniques".

As a designer/media artist, Heitor has worked with Touch (UK), Tuxedomoon (BE/USA), Radio Manobras (PT), KREV (SE), Ash international (UK), The Tapeworm (DE/UK), Visible (ES), 333 (DE/PT) and Stopestra (PT), among others.

Further information at www.benevolentanger.org



Susana Barreto

Susana Barreto is a Design Educator and Researcher at the Faculty of Fine Arts, University of Porto. Susana has worked in London, at Central Saint Martins where she completed her PhD and PostDoc at the Macau Polytechnic. Her scholarly inquiry is focused on the role of ethics in visual communication, design and crime, cross-cultural design and plural narratives in design through local stories. For the last two years, Susana has been involved in two research projects focusing on the preservation of specialised knowledge at risk of disappearance that is embedded in individual experiences of retired professors, researchers, and

practitioners in the fields of arts, crafts, and design. She has collaborated with Research Government Departments and supervised PhD and Master's students. She is currently involved in two projects: "Stories from Both Sides: Towards a Collective Narrative" and "Vision for the Neiva River Mouth", funded by the New European Bauhaus and Motirô – an international network researching celebrations as testimonies. Susana is a member of the ID+ Research Institute for Design Media and Culture - LUME: Unexpected Media Lab.

15:15-16:00 | Room 100e

Thursday Poster Session

63681 17:00-18:00

Application of Augmented Reality to Haptic Analog: The Challenges of Modern Three-dimensional Technology Serigraphic Imaging

Mengxi Cui, Michael Graves College - Wenzhou-Kean University, China
Spencer Steenblik, Michael Graves College - Wenzhou-Kean University, China
Randy Clark, Michael Graves College - Wenzhou-Kean University, China

Today, generation Z has grown up in a digital world, saturated by electronic media as opposed to traditional media. Therefore, in the design courses of colleges and universities, teaching has also shifted from traditional technologies toward new technologies. Why do our students need to learn traditional media and technology? At the West Bund Dome in Shanghai, design leaders and professors from the Architecture and Graphic Design Departments invited young people to participate in a workshop hosted by FutureLab. We asked students to take a snapshot of something (such as their hand or another object) through a series of lenses or filters. We guided them to use Photogrammetry (3D scanning) to scan those objects. After the scanning was completed, the picture of the photographed 3D model with its texture was mixed creating an altogether new creation. These futuristic images were finally imaged using traditional screen-printing methods. This presented new interpretations of the original subject, allowing the observer to experience a different than anticipated outcome from the exercise. As warned by philosophers such as Kierkegaard², new technologies bring convenience, but they often dilute meaning. Compared with traditional analog machines and devices, the complexity and imperfection of older technology seem to better cater to human nature and individuality. Today with the new technologies, People can "draw" their pictures with minimal drawing skill, mimicking traditional techniques. These new technologies can be used to bring both creativity, introspection, and warmth to what we call "design".

63367 17:00-18:00

Multisensory Approaches From Interactive Art to Inclusive Design

Federica Delprino, University of Genova, Italy

In interactive art and multimedia installations, the public plays a fundamental part. Visitors change the meaning and the appearance of artwork according to their sensitivity and preferred way of interaction. For designers, this audience is the set of users on which they should focus their projects. Among the most pervasive technologies are a variety of solutions for interacting with the environment, activated by gesture and movement sensors, voice interfaces,... and a range of ways of enabling people with different abilities. Many of these technologies were born to be integrated into disability devices or are often used to allow access to the usage of an artifact by people with different kinds of impairments. There are many examples of how solutions designed for specific niches have over time been integrated into common use in private and public areas, recreational and cultural spaces. Through an analysis of the process that has given rise to this, it is possible to understand when and how designers should intervene in the creation of their projects to ensure the accessibility and usability of the resulting artifacts. In the empathizing and ideating design phases, it seems necessary to consider the various multisensory modes of interaction to guarantee the usability and scalability of the project. In this way, the outcome may become truly inclusive and accessible, but also a benchmark for human-centered design, starting from specific needs and incorporating them into everyday use to integrate small groups and minorities, not creating projects and devices that separate and divide them.

Notes

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Friday, July 08

Featured Presentations & Parallel Sessions

All times are in Western European Summer Time (UTC+1)

Abstracts appear as originally submitted by the author. Any spelling, grammatical, or typographical errors are those of the author.

Keynote Presentation: Clara Gonçalves

How a Local Knowledge Network can Impact the Generation of Economic and Social Value within the Community

Friday, July 08 | 09:30-10:00 | Room 101 & Online

The current communication is about a 12-year experience and evidence towards the creation of a community knowledge network based on a human-centred strategy and powered by a medium-sized university (32,000 students) in Portugal. Creating a community of practice that drives R&D products into strategic future business opportunities was the “inspiration” from the start. One of the main results was the establishment of a large network of partnerships all over the world, always focused on organisations / institutions such as universities, accelerators, funding agencies, embassies, scientific and technological organisations (e.g. European Space Agency or Fraunhofer Institute in Germany), corporate companies, among many others. At the same time and as the project evolved, mobilising technology and releasing human capacity to face new challenges and shape a new socioeconomic system capable of offering opportunities for all as a community also required the definition of a strategy to empower the entire community (not just leaders) to co-create a new vision on 1) Growth and competitiveness; 2) Education, skills and work; 3) Equality, diversity and inclusion. Today the main challenges remain on the side of long-term sustainability partnerships with communities (local and foreign) and the constant creation of new forward-looking activities to infinity and beyond!

Clara Gonçalves

Clara Gonçalves is a believer in innovation and technology, with great expertise in global knowledge networks, involving academic communities, companies and startups. Clara Gonçalves has a degree



in Agricultural Engineering from the Faculty of Sciences of the University of Porto, with a specialisation in Innovation, Knowledge and Entrepreneurship from the Department of Economics, Management and Industrial Engineering of the University of Aveiro, and has started an Executive MBA at Erasmus University - Rotterdam School of Management, which has been postponed due to the COVID-19 pandemic.

She is the co-founder of a Scientific Machine Learning startup, Inductiva Research Labs, in which she holds the position of Head of Strategy and Partnerships. In recent years, Clara has worked as Finance and Foresight Group Leader at the Fraunhofer Institute in Portugal, the Head of Innovation and Technology Transfer at the

Health Innovation Center of the Faculty of Medicine of the University of Minho, and the Executive Director of UPTEC – Science and Technology Park at the University of Porto, implementing an effective model of knowledge and technology transfer between academia and companies, supporting more than 500 technology-based start-ups and spin-offs and attracting around 30 Innovation Centers from national and international companies to the ecosystem of the University of Porto.

In 2018 Clara was awarded the “2018 Champion of the Year” by the Business and Innovation Network (BIN), a knowledge network between the University of Porto, the University of São Paulo and the University of Sheffield.

Keynote Presentation: Lynn Sayers-McHattie

Viability and Sustainability of Creative Practices, Crafts and Traditional Industry Sectors

Friday, July 08 | 10:00-10:30 | Room 101 & Online

Contemporary practices of craft are increasingly associated with progressive agendas of gender emancipation, environmental sustainability and locally rooted ethical production and consumption. This presentation explores the 'political economy of craft' as an embodied and experiential practice, towards situating craft as a rich form of cultural wisdom. The research focuses on Fair Isle and Sanquhar knitting as a body of knowledges and practices - viewed as a form of material cultural assets - which can support the future sustainability of craft practitioners, in distributed geographical contexts. In so doing cultural assets yield an emotional and intellectual approach that literally unpicks the political economy of craft exposing its relations to production whilst at the same time binding the interdependencies between innovation and tradition that contribute to the cultural life of communities.



Lynn Sayers-McHattie

Lynn is Professor of Design Innovation at the Glasgow School of Art and Programme Director - Research in the Innovation School. Lynn holds an AHRC funded PhD in Design from the Glasgow School of Art (2012). She is a designer with over 30 years' experience, has held Design Director roles in the creative industries, and as a consultant has directed assignments internationally in fashion and textiles. Lynn's place-based research interests are located within geographically distributed, and indigenous, island communities. Her cross-cultural research explores craft and textile practices as 'cultural assets', which

connect to the landscape and culture of communities, and the role design-led innovation can play in the transformation of craft economies and socio-cultural renewal. She works extensively in the Highlands & Islands of Scotland and Southeast Asia. Lynn has considerable experience of directing UKRI funded bids, she was Principal Investigator (PI) on AHRC funded Design Innovation & Land-Assets – part of the UKRI Strategic Priorities programme on Landscape Decisions – and is currently PI for Design Innovation & Cultural Resonances an AHRC funded Knowledge Exchange programme on the theme of place. Lynn is Co-Director of the SGSAH Creative Economy Hub and sits on the Editorial Board of *CoDesign Journal*.

11:00-12:15 | Room 111

Friday Onsite Parallel Session 1

Learning Practices in Art & Design Education

Session Chair: Shoshi Bar-Eli

64228 11:00-11:25

Exploring the Hybridization of Traditional Printing and Digital Fabrication Processes to Expand Design Innovation in the Classroom

Pedro Amado, University of Porto, Portugal

Cristina Ferreira, University of Porto, Portugal

Maira Woloszyn, Federal University of Santa Catarina, Brazil

Graphic Design education has been institutionalized for several decades now (Almeida, 2009; Morais, 2021), but digital competencies have shifted the role of the "designer-author" to a "digital black-box operator" (Maedche et al., 2019; Menges & Ahlquist, 2011). Digital Design and Media Literacy are directly related to the development of critical thinking (Martino, 2015). Promoting such a skill set is a priority as it allows us to understand and operate a range or set of tools and processes of the wider media ecosystem today, and project these into future uses or developments (Abreu, 2020; Horcades, 2016). This paper aims to promote Digital Design and Media Literacy through the design-led research and development process of an innovative DIY flatbed proof press, the XT-Press. It can be fabricated at home, or in educational environments, allowing for the designers and students to learn more about the history, purpose, and (mechanical and graphic) possibilities of this tool and process. By presenting the results from two experiences in building and using the press with a small group of participants in a Graphic Design higher education classroom context, we have learned that by being able to iterate back and forth between design and, fabrication of the tools and processes. As well as design and printing of the "designer-author" compositions promote the acquisition of these skills and the expansion of critical thinking. At the same time, providing insight into historical and technical production processes by achieving control and intervention in all stages of the design and production.

64343 11:25-11:50

Impact of Students' Engagement in Innovative Projects to Enrich University Campus: Developing Competencies and Attributes towards Study and Career Success

Hesham El Marsafawy, Gulf University, Bahrain

Marwa Zakaria Mohamed, Helwan University, Egypt

Omar Blibech, Gulf University, Bahrain

The research aims to examine the impact of students' engagement in design and execution of real-life innovative projects to enrich their educational environment and university campus. The case studies presented in this research reflect on range of projects which have been conducted by students at two Higher Education Institutions in two countries, namely Bahrain and Egypt. The project briefs have been developed thoughtfully with an intention to create functional and aesthetic values to selected spaces within the campuses where students, staff and visitors interact on daily basis. The study explores the students' experiences during and after the implementation of these innovative real-life projects to evaluate the range of developed competencies and attributes in terms of taking initiatives and responsibility, commitment, teamwork, leadership, and self-confidence as well as enhance technical abilities and skills relevant to the students' field of study and career after graduation. Hence, a qualitative methodology is developed and deployed to interview students who were engaged in these projects. The interviews are structured to provide an in-depth understanding of developed competencies, attributes and skills as well as the impact on campus enrichment, students' passion about their field of study, connection and belongingness to their educational environment. The analysis of the interviews and project results are utilized to develop a framework that supports academic leaders and teaching teams at higher education institutions in designing innovative students' projects which are oriented towards adding values and improvements to the formal and informal learning processes with impact on various environments across university's campuses.

63202 11:50-12:15

Thinking with Design: On Developing an Agile Professional Mindset

Shoshi Bar-Eli, COLMAN - College of Management Academic Studies, Israel

Dramatic changes in society, technology, economics, the environment, and politics are occurring at an accelerated pace. The complexity and rapid changes of the future require an improvement to professional development programs. There is an urgent need to develop agile professional mindsets that can adapt to the emerging changes. We employed a professional development course for design students as a case study in assimilating agile professional mindset principles. The proposed paper focuses on a description and analysis of the course, focusing on changing the way designers think, offering them an awareness of their professional perception and design behavior, in order for them to develop flexibility in adjusting to rapidly changing future complexities and professional needs. The innovative methodology taught throughout the course included four stages: 1. Familiarization with the current mindset - A process of reflection on professional perceptions - use of the "Visual Track" tool. 2. Re-definition of the student's mind set - Mapping resources and extracting principles of action by using inspirations (goals, content, methods and impact on society) 3. Identification of personal characteristics of design behavior - placing each student within sequences of behavioral design characteristics. 4. Creative Implementation of the new mindset - Development of a unique project in which each student places themselves in various stakeholders' positions. The students reported that analysis of inspirational projects through familiarity with their design behavior helped them to re-define their professional mindset. As a result, they could view the existing environment from a new angle and design a more creative

12:30-13:20 | Room 111

Friday Onsite Parallel Session 2

Teaching and Learning the Arts

Workshop Presentation

62717 12:30-13:20

"Pet the Lizard"- Calming our Brain in Performance, Teaching and Life

Barbara Fast, University of Oklahoma, United States

Biologically our brain, sometimes called the lizard brain, is hardwired to be fearful and alert. While this fundamental aspect of our brain allowed us to survive, the fight-flight-freeze response remains an unconscious reaction to daily events: preparing to perform, getting to study, or listening to the daily news. Exacerbated by the pandemic, finding ways to calm our lizard brain becomes an essential coping skill for teachers and students in our 21st century lives. This workshop presents easy-to-use skills for students and teachers to help calm the background of vigilant anxiety that allowed us to survive. Sometimes referenced as "Pet the Lizard" (Hanson, 2018), suggestions from experts in the fields of sports psychology, neuropsychology, and positive psychology will be shared. "Pet the Lizard" activities, easy to include in daily lives, are explored in the workshop. They include: • Breathing techniques (Brach, 2020) • Name the Stress, followed with ...by at least (Commander, 2020) • Name the Support, Grateful for (Seligman, 2011). "Pet the Lizard" activities related to helping students and teachers "Get To It" – starting to practice, studying for exams, or creating lessons plans, will be shared: • Pomodoro Technic and current adaptations • Focusmate • Tada Lists. Apps and websites that are useful will also be suggested. The presenter has explored the "Pet the Lizard" activities within the workshop with students, both in group and individual teaching. Workshop participants will leave the workshop with technics, particularly helpful during the pandemic, that are easily applied in daily professional lives.

14:20-15:10 | Room 111

Friday Onsite Parallel Session 3

Design and New Media

Session Chair: Catarina Tarrega

63306 14:20-14:45

Goffman's Dramaturgy and the Character Attachment Phenomenon: Identity Conceptions Through Fashion in the Virtual and Offline Realities

Catarina Tarrega, Universidade Anhembi Morumbi, Brazil

The transition from Hypermodernity to the Post-Human era changed the processes of identification and singularization of the self. The use of technologies has become a manipulation tool, experimenting new ways of using more polished manipulation functions. There is a type of meta-communication that goes beyond symbols or meanings: virtual environments of the MMORPG genre - Massive Multiplayer Online Role-Playing Game - provide infinite possibilities for the self-design to their players. In these realities, the self-image production extrapolates the "real", and the character is seen as an incarnation of the player because of the intense immersion which characterizes this genre. Therefore, just as subjectivity packs are formed in our carnal reality, they are also developed in the virtual worlds of MMORPGs. These sets of consumption goods are built with promises of belonging to the Post-Human world, as a second consciousness full of identity possibilities, now on the virtual environment. The study was developed through bibliographic research and its qualitative analysis, aiming to demonstrate the similarities of the real and the virtual realities through the ostentatious values given to consumption items in MMORPGs. The objective is to study the interaction between the observer and the observed, evaluating the player's expressiveness in these universes, through Erving Goffman's Dramaturgy conception theory, also judging whether or not this subject is competent in producing and conveying a proper self, through the use of self-design. As a result, the virtual characters and its players are important matters to analyze identification and aesthetic modification processes in the Post-Human era.

63359 14:45-15:10

The Role of Advanced Typographic Taxonomy Systems vis-à-vis Modular, Variable and Parametric Typography

João Francisco Rodrigues Gomes, CIAUD, Lisbon School of Architecture, Universidade de Lisboa, Portugal

João Brandão, CIAUD, Lisbon School of Architecture, Universidade de Lisboa, Portugal

Teresa Olazabal Cabral, CIAUD, Lisbon School of Architecture, Universidade de Lisboa, Portugal

Elisabete Rolo, CIAUD, Lisbon School of Architecture, Universidade de Lisboa, Portugal

Typographic taxonomy systems categorise and describe the vast corpus of typefaces, created over centuries, and are used in teaching, commercial and professional settings. Mainstream taxonomy systems usually focus on separating neatly defined, text-bound typefaces into discrete classes, while grouping a huge diversity of display-bound typefaces and other outliers into loosely defined, generic classes. Modular and geometric typeface specimens are extremely varied and sometimes stylistically hybrid. Similarly, variable and/or parametric OpenType font specimens can cover a stylistic gamut potentially larger than those from simple typeface families or even multi-style, sans-serif+serif superfamilies (such as Rotis, Scala, etc.). The largely dominant mainstream taxonomy systems, with their typically simplistic and single-class categorisation processes, inadequately cover these complex typefaces. Moreover, the latter are used both academically and professionally, for expressive media and, particularly variable and/or parametric typefaces, also for running text (whose readability is, opposingly, paramount). The ever-increasing popularity and variety of these typefaces further exacerbates the inadequacy of mainstream taxonomy systems for academic and professional scenarios. Using advanced taxonomy systems would address these otherwise unavoidable issues and, thus, improve typography teaching, distribution of new typefaces, and typeface selection by professionals from within their already acquired/licenced collections. As a specific solution to these issues and their consequences, we present a theoretical approach, using a non-interventionist methodology of qualitative research, via literature review and observation, analysing potential advanced alternatives to mainstream taxonomy systems and proposing a further extension, in line with Brandão et al.'s 2020 proposal, to Dixon's own purposely extensible, multi-class-tagging, parametric/descriptive system from 2002.

15:25-16:40 | Room 111

Friday Onsite Parallel Session 4

Learning Practices in Art & Design Education

Session Chair: Hesham El Marsafawy

63516 15:25-15:50

Design as a Facilitator to Changing Mindsets for Craftmanship Enterprises' Resilience

Adriana Fernandes, University of Porto, Portugal

Claudia Albino, University of Aveiro, Portugal

Julio Dolbeth, University of Porto, Portugal

Fabiano Pereira, Instituto Europeo di Design Brasil, Brazil

Craftmanship is currently promoted as a foremost cultural manifestation, as they represent the heritage, diversity, and creative potential of a society. It also favors the generation of jobs, being characterized as an economic activity and not static, which must adapt to contemporary times and respond to the market and consumer needs. There are glaring gaps in awareness and information among artisans in this field, and design can contribute to mediating these two discontinuous realities. This article presents a case study that analyzes the possibilities of an approximation between design and craftsmanship that promotes collaborative processes in a knowledge-sharing scenario to create sustainable products and services. The design thinking approach was used in three workshops involving a group of thirty-nine artisans and three designers, where reflection exercises about artisanal product values, brand building, and business management were carried out. Each participant was encouraged to reflect and collaborate with their peers. The designers took on the role of facilitators for change and innovation, working with artisans to build a new mindset about their craft practice as a business. The focus on changing the mindset of those involved intends to favor the autonomy and resilience of the enterprises by proposing lasting and not ephemeral positive changes, as seen in the current state of the art. This study allowed us to infer that innovation through design happens when the results achieved present new models of individual and collective behavior, influence business models, and establish financial results for those involved.

64344 15:50-16:15

Utilization of Science Fiction Drama in Higher Education: An Innovative Pedagogy for Brain Warm-up, Inspire Futuristic Views, and Foster Creativity

Ahmad Tawalbeh, Gulf University, Bahrain

Omar Blibech, Gulf University, Bahrain

Hesham El Marsafawy, Gulf University, Bahrain

The research aims to examine the potentiality of utilizing science fiction drama in higher education learning environments. The research team initiated the study by surveying the preferences of both students and instructors in range of higher education institutions towards science fiction drama. The surveys have been extended to explore the existing practices of utilizing science fiction drama in educational processes. The students and instructors' surveys provided evidence of expressed personal interest in watching science fiction drama with diverse preferences towards various types of science fiction drama. However, the results of the surveys demonstrated low utilization of science fiction drama in the existing teaching and learning practices. Accordingly, an experimental study was conducted in a sample class where a subject on 'Sustainability' has been delivered by presenting selected sections of a relevant science fiction movie to a group of students followed by a lecture with reflections on the presented scenes. The students were assigned to reflect on the subject in a structured questionnaire in terms of understanding and innovative thoughts around the subject. The students' feedback provided valuable insights on the positive impact and effectiveness of utilizing science fiction drama within higher education learning environment. The research contributes to the development of innovative pedagogies at higher education institutions by introducing the approach and outlining the mechanism of utilizing science fiction drama in teaching and learning processes as alternative tool for brain warm-up, better understanding of subject, forming futuristic views, and fostering creativity while enhancing students' engagement.

63326 16:15-16:40

Digital Media and Sustainable Development Goals Breathe New Life Into the Artworks From the Soares Dos Reis National Museum

Rodrigo Carvalho, Universidade Lusófona do Porto, Portugal

Cláudia Lima, Universidade Lusófona do Porto, Portugal

Susana Barreto, Universidade do Porto, Portugal

Eliaana Penedos-Santiago, Universidade do Porto, Portugal

This paper describes a pedagogical practice involving students from two Universities and the Soares Dos Reis National Museum, all based in Porto, Portugal. The students - from Design, Multimedia, Videogames, and Visual Art fields - were challenged to recreate and animate, through digital technologies, artworks from the museum's collection. Besides exploring animation techniques, students had another inherent task: each work had to be focused on one, or more, of the 17 United Nations' Sustainable Development Goals. These goals, which cover different but interrelated topics such as clean energy, sustainable cities, climate, or education, were used as themes for each one of the projects. This way, students apart from the creation of digital media works, were also creating awareness for different social and environmental causes. This practice, therefore, has three different, but connected anchor points: shedding light into Portuguese art history and cultural heritage by means of recreating the past; the knowledge and awareness of social and environmental issues; and the exploration of digital animation techniques. In this study, all different stages of the pedagogical practice are covered, as well as analysis and discussion of the students' process and outcomes. The project is also put into context with similar methodologic approaches on recreating artwork from the past as a pedagogical tool. The outputs of the project will be later exhibited in the Museum alongside the original artworks in a long-term exhibition of the collection, mostly paintings from the XIX and XX centuries.

16:50-17:40 | Room 111

Friday Onsite Parallel Session 5

Interdisciplinary Art & Design Projects

Panel Presentation

63355 16:50-17:40

Sonic Kinesthetic Forest: Listening to and Dancing With Trees

Lisa Sandlos, York University, Canada

Rennie Tang, California State Polytechnic University, United States

Eleni-Ira Panourgia, LISAA Research Lab, Université Gustave Eiffel, France

Sonic Kinesthetic Forest is an interdisciplinary research project and pedagogical investigation that uses sensory-based, creative methods of drawing, sound, and movement for connecting humans more viscerally to trees and forest landscapes. Our work responds to David Abrams' premise in *The Spell of the Sensuous* that sensory activities are vital for mitigating human disembodiment, desensitization, and disconnectedness from nature in contemporary life. We approach resilience from both human and more-than-human perspectives to amplify sensory modes of expression, while working together to adapt to and recover from extremes and sharing aliveness as common ground. In this panel presentation we discuss the findings from two collaborative, pedagogical projects: *Listening to Trees*, a workshop for undergraduate landscape architecture students at Cal Poly Pomona University (USA) and *Dancing with Trees*, a choreographic piece created for adolescent dancers as part of the Guelph Youth Dancers project (Canada). Drawing from our respective disciplines as landscape designer, sound artist, and choreographer/movement analyst, we explain and compare: a) the methodology we developed for exploring the sonic kinesthetic attributes of trees through the embodied acts of listening and moving, and the translation of those qualities to paper through charcoal drawings, and b) the process of guiding participants in sensory-based activities. We then present how participants applied the proposed sonic kinesthetic techniques for being with trees and finding ways to enhance their own resilience, while cultivating a deeper understanding of the aliveness of trees, rather than objectifying and separating them from the sentient world.

11:00-12:15 | Room 113

Friday Onsite Parallel Session 1

Design for Society

Session Chair: Cláudia Lima

64400 11:00-11:25

Design Research as an Instrument of Empathy and Resilience: A Case Study in Porto on Reclusion in a Collective House

Marcela Rosa, University of Porto, Portugal

Teresa Franqueira, University of Aveiro, Portugal

Susana Barreto, University of Porto, Portugal

Considering the reality of international students who quarantined in Portuguese student halls of residence during the initial confinement period of the SARS-CoV-2 pandemic in 2020, this article argues for the role of design research as an instrument of empathy to foster resilience in situations of heightened emotional stress such as the reclusion lived during this period. The study is driven by the participant observation of increasing isolation, fear, and emotional distress experienced by international students in confinement in a hall of residence at the University of Porto, Portugal. We base our theoretic discussion on concepts of empathy and sense of belonging, applied to the reality of student halls of residence and international students' experience. We used the ethnographic method, namely participant observation, semi-structured interviews, and capture of images to analyze the testimonies of thirty-six international students interviewed between May and September 2020 about their confinement and welcoming experiences within the residence. Research findings range from a relevant repository of interviews on international students' feelings towards the pandemic period while in halls of residence, the need for resilience in identifying opportunities amid adversity, to a lag in the current welcoming model of the residence. The expected outcomes are to design a prototype of a welcoming program at the University of Porto halls of residence that include but is not limited to a welcome package based on the identified lagging in the current residence welcoming model, literature review, and other case studies on Porto student halls of residence.

63305 11:25-11:50

Generative Design: Co-creation Process Between Designer and Computational Thinking

Camilo Ayala Monje, Universidad de los Andes, Colombia

Camilo Ayala-Garcia, Universidad de los Andes, Colombia

Generative design is a projective tool that allows designers and creators from other areas of knowledge to have applied innovation approaches. It is currently an emerging exploration process that integrates artificial intelligence and parametric design processes, consolidating itself as a milestone in the construction of alternative design proposals. This research analyzes the potential value of generative design in different fields; it presents and exemplifies the co-creation process between the designer and computational thinking, with six prototypes. It shows the product design process using this methodology and exposes the importance of upcoming technologies. Generative design was recognized as a valuable opportunity for teaching and appropriation in academia because it allows to create products, evaluate, and optimize designs quickly, could generate more efficient processes and influences agile decision making to achieve higher performance throughout the design process. This research found that it is important for design students to know these tools, and to understand that, although they are very powerful, the human designer is and will be the one who makes the final decisions about the project, above the answers and algorithmic calculations that the parametric system gives. This research shows that this technology helps designers to face challenges in an era defined by the high degree of digitization, where it is increasingly necessary to create products that integrate with new technologies and human needs.

64038 11:50-12:15

Contributions of Design in the Creation of Cognitive Stimulation Artefacts for Portuguese People With Dementia

Cláudia Lima, ID+ / FBAUP / University Lusófona do Porto, Portugal

Eliana Penados-Santiago, ID+/University of Porto, Portugal

Susana Barreto, ID+/FBAUP/University of Porto, Portugal

This project addresses the urge for a Design intervention in the production of cognitive stimulation artefacts oriented towards the specific needs of Portuguese People with Dementia (PPwD). In partnership with Alzheimer Portugal, a pedagogical project was developed with undergraduate students of the Communication Design BA at Lusófona University, Porto, where participants were asked to develop cognitive stimulus materials for users of a local Alzheimer day care centre. This one semester project included a research phase, practical development, and prototype creation for the users' benefit. During the research process, the lack of materials oriented towards PPwD became evident. Existing materials are commonly in foreign languages or, when translated, do not reflect cultural and biographical issues of the Portuguese population, which are essential in cognitive stimulation therapies. Materials more oriented to the Portuguese public are usually developed by therapists or in a self-taught fashion, denouncing the absence of Design, which is reflected in a poor image and often neglecting usability, accessibility, and safety. Projects by students, under the guidance of a Design teacher and a therapist, resulted in artefacts specifically oriented towards PPwD, contemplating biographical components and cultural traits. By providing a more assertive response, they also highlighted an imminent gap in the market. Based on the outcomes, a project is now being considered at a national level, in partnership with Alzheimer Portugal and a consortium of Portuguese universities, aiming at a more efficient response and contemplating several areas of Design, namely, Communication, Multimedia, Interaction, Illustration, and Culture Studies.

12:30-13:20 | Room 113

Friday Onsite Parallel Session 2

Teaching and Learning the Arts

Workshop Presentation

62550 12:30-13:20

Art Museum Docents: An Integral Part of Art Education

Lynn Zimmerman, Independent Scholar, United States

Over the years, the role of docents in museums has changed with the times. In the 21st century, the shift has been away from lecture-style tours to visitor-centered and inquiry-based tours. This workshop will focus on some of the activities used by volunteer docents at Weatherspoon Art Museum located on the University of North Carolina at Greensboro campus. The workshop will provide some background information on the museum which is embedded in an educational institution and its docent program, which is structured to be an educational experience for the docents and for their visitors. While the training for docents is about the art in the exhibitions, more importantly, it focuses on how to teach visitors to see art not just look at it. Rather than imparting a fact-filled lecture about numerous artworks, the docents engage visitors with a few pieces through slow looking. Docents prompt visitors to express their opinions and their connections to these few pieces of art, then encourage them to explore on their own. In this way, visitors make their own meaning of the art which deepens their experience as attentive viewers of art. This workshop will include several interactive activities that demonstrate some of the visual, auditory, and kinesthetic strategies that the docents use to help visitors think critically about the art on display and discover a personal connection to it.

14:20-15:10 | Room 113

Friday Onsite Parallel Session 3

Promoting Cultural Heritage in Art and Design

Workshop Presentation

63973 14:20-15:10

The Artistic Learning Experience Is Enhanced Through Music

David Lewis Brooks, Rainbow Travel Network, United States

By employing age-old and new musical technologies, learning growth of both skills and content can be enhanced. This educational workshop focuses on integrating content-based instructional tasks, learning strategies, and intercultural competence outcomes through the unique qualities of music as learning content – both for native speakers and for ESL students. Novice or experienced teachers can breathe new life into art, language, and literacy courses, or create new content-based modules by capitalizing on the power of music for self-expression and exploring deeper intercultural values. Use of the human instruments readily available as well as various apps for the Apple iPhone and iPad will be demonstrated by active participant involvement. The workshop highlights some of the instructional techniques, as well as some of the available software applications and devices that run them for adding music-related content and instructional activities to the K-12 art classroom. Actual instructional uses for these mobile ICT devices such as the (iPod) iPad, and iPhone. Music apps will be introduced and guidelines for what to consider in making decisions for adopting or purchasing interactive media technologies will be discussed. Features of a classroom environment that support language growth, creative self-expression, and increased intercultural competence are special considerations. In addition, provisions for successful integration of music content and skills into art curriculum development will be addressed. Those with a strong interest in music or wanting experience in the use of these forms of mobile technology for teaching are invited to attend this workshop.

15:25-16:40 | Room 113

Friday Onsite Parallel Session 4

Art and Design Education for Sustainable Development

Session Chair: Thea Schoeman

64090 15:25-15:50

Can Maps and Map Symbols Help Teaching Sustainable Development?

Thea Schoeman, University of Johannesburg, South Africa

Cartography is the science, technology and art of making maps. Maps are part of daily life – from finding your way via Google Maps to monitoring the Sustainable Development Goals (SDGs). Map symbols are the standard language used by cartographers to visually indicate and describe the distribution of features and phenomena on the earth's surface. However, the question arises if Geography teachers in Gauteng (South Africa) understand and correctly use map symbols. This study investigated the competence of primary and high school teachers of map symbols before and after attending a short learning programme (SLP) on mapwork skills. Teachers rated their level of competence of map symbols before and after the SLP. Only 17.8% of primary school teachers rated themselves with a high level of competence in understanding and using map symbols correctly before the SLP. This increased to 65.1% after completing the SLP. Similar results were obtained for high school teachers – 9.4% rated themselves with a high level of competence before the SLP. This increased to 58.1% after completion of the SLP. The teachers were asked to complete a short survey on using map symbols to teach sustainable development. The majority (90.8%) agreed that map symbols can be used to convey environmental and societal problems. There was also strong agreement on the use of maps in teaching and learning with 86.6% indicating it extremely important to use maps to make learners aware of sustainable development and SDGs.

64215 15:50-16:15

Design Education for Sustainability and New Social Changes

Ermanno Aparo, Instituto Politécnico de Viana do Castelo, Portugal & Research Centre for Architecture, Urbanism and Design - CIAUD, Portugal

Liliana Soares, Instituto Politécnico de Viana do Castelo - IPVC, Portugal & Research Centre for Architecture, Urbanism and Design - CIAUD, Portugal

Jorge Teixeira, Instituto Politécnico de Viana do Castelo - IPVC, Portugal

Rui Cavaleiro, Instituto Politécnico de Viana do Castelo - IPVC, Portugal

Manuel Rivas, Instituto Politécnico de Viana do Castelo - IPVC, Portugal

This paper is an ongoing research study that highlights sustainability and social ventures to create connections between academic and business worlds in order to design towards the new functions of XXI century's reality. The authors underline how design practices can help to create a pilot project, implementing social changes. This means that governmental inefficiency presents itself as a new problem that designers, educators and entrepreneurs must face, demanding to endlessly diagnose the situation. This research proposes to redesign and develop a self-sustainable habitat for minorities, such as, refugees, something that is integrated in the city and not isolated. The issue of building in historic centers is essential to understand the life of the city in a changing world. That is, it is the ability to design systems and not compact and definitive frames. Methodologically, this research is sustained by transversal thinking, pattern-language and sustainability, connecting established methods with new techniques. The paper present some cases studies with design students where creative activities transformed the entire urban community. The authors want to prove that designing inclusive systems can serve as a stimulus to attract companies, creating new stakeholders that stimulate new product development and innovation.

63336 16:15-16:40

Teaching the SDGs: Content-based Research and Virtual International Exchange via Multimedia

Michael Barr, Kyoto University of Foreign Studies, Japan

Virtually everyone currently living in the modern world with access to the global media is familiar with the United Nations Sustainable Development Goals (a.k.a. the SDGs). The ubiquity of the symbol, the logo, and the colorful icon is such that these commitments made in 2015 are recognizable around the globe. This is particularly true in Kyoto, Japan, where one can see daily signage on buses or billboards, regular posts in the media, and support expressed on the local as well as national level of government. Institutions are also on board, as these ideals are both simple to understand and, importantly, easy for students to agree with on principle. The SDGs have been called "the world's largest lesson", and as such they constitute a tremendous educational opportunity. Throughout the unprecedented academic years of 2020 and 2021, a project was initiated, extended, and continued between cohorts of students at Kyoto University of Foreign Studies and Wenzao Ursuline University of Languages in Kaohsiung, Taiwan. The ongoing aim of these collaborations has been to connect larger issues to local communities. Due to the ubiquity and global reach of the Google Suite for Education - now Google Workspace for Education - groups can work together and interact in a way never before possible. Our research highlights methodology, best practices, challenges and advantages of structuring collaborative international projects in a virtual space with hyperlinks, sheets, multimedia, and shared documents embedded within a master sheet shared between up to a hundred participants.

16:50-17:40 | Room 113

Friday Onsite Parallel Session 5

Academic Practices Outside the Classroom

Workshop Presentation

64253 16:50-17:40

Nature/Form/Process: A Workshop as a Tool to Test Intended Changes to the Course – Biomaterials: Designing With Living Systems

Raul Pinto, İzmir University of Economics, Turkey

This paper, describe the workshop Nature|Form|Process that was commissioned by Arkas Cultural Center. This workshop was held as a pre-event for the exhibition Nature|Gardens|Fantasies, a compilation of works from Arkas' collection, that focused on offering opportunities to reconsider the relationship between art, nature, garden and humankind. As a conceptual construct to relate the two, the narrative focused on considering a Garden as the representation of something that comes to exist when humans approach Nature with Imagination. This led to the question – what can be considered a common outcome when Nature is approached through Process? – being Form, the premise that best embraces this description. This workshop was an opportunity to test the assumptions made for the restructuring of the course Biomaterials: Designing with Living Systems. For this, it looked to understand from the participants' point-of-view, how students would act under similar circumstances (blended learning during covid-19 related lockdowns). In addition, to learn how to generate tools that mitigate frustration and stress that tends to amass due to subjective connotations, as is the perception of well-being when working with living-systems. Furthermore, because living-systems are resistant to change, these modifications should be suggested by stressing their phenotypic plasticity. Moreover, these changes should be monitored by paying attention to how those actions influenced alterations on its surroundings. Therefore these ripple effects have the potential to indicate how to deconstruct systematic problems, seeing that complexity in its majority is related to the fact that these systems are unpredictable, and in a constant flow.

11:00-12:15 | Room 115

Friday Onsite Parallel Session 1

Archiving & Preservation of Design and Data

Session Chair: Marta Fernandes

64407 11:00-11:25

Visual Digital Archives – Information Design for Content

Marta Fernandes, Polytechnic Institute of Porto, Portugal

This article is part of a study on the visual methods data and information organization that recur to information visualization structures, for the purpose of future preservation of physical and born digital content. It also aims to recognize the designing of archives as an active process in information storage and retrieval. The building of an Archive, a structured and declared element of information, implies the awareness of existing data organization processes. This management of information allows interconnections between organizations made visible in projects like 'Europeana'. Yet, most archives offer very laborious search modes, interfering with our ability to interpret and read information that should be more pervious. Design, archiving and image are fertile ground for the conceptualization, creation and origin of new visual media in information visualization. Within this context, we study, observe and infer on how they can become an implementation model for new types of archives – visual digital archives. With this study, we seek to analyse what is behind the digital archive model. It aims to infer on perception, culture and visual lexicon issues, giving guidelines to the creation and construct of visual digital archives. The methodology is focused on literary review and case studies, which propose that, there are recurrent visual models of organizing data and that information visualization can set the creation of broader visual digital archive structures.

64396 11:25-11:50

Visual Explorations of Objective Data: The Meaning of Unexpected Results

Rui Costa, Universidade de Aveiro, Portugal

Nina Costa, Universidade de Aveiro, Portugal

Afonso Borges, Universidade de Aveiro, Portugal

Vasco Branco, Universidade de Aveiro, Portugal

António Modesto, Universidade do Porto, Portugal

Raul Cunha, Universidade de Lisboa, Portugal

Ana Catarina Silva, Instituto Politécnico do Cávado e do Ave, Portugal

Previous work developed within project DesignObs. - For a Design Observatory in Portugal, focused on producing data about the different vectors of the Portuguese design ecosystem (e.g. education, research, companies) and addressing its literacy. The collection of multiple evidence and the production of design-focused databases, available for anyone who wants to interpret them, was one of the main goals of the project – to create information that could support strategic decision-making in the area of design.

One of the main problems of science lies in the difficulty in transferring the knowledge generated to the social and economic fabric, severely limiting its expected impact. After producing the databases, 70 students design students and 9 professionals were invited to manipulate and interpret data, to produce visual and, sometimes, provocative communications about this data. The participation of young and experienced designers resulted in 41 posters that combine multiple approaches coming from the arts, illustration, cartoon, graphic design amongst others design-related disciplines. In this paper, we aim to address the nature of these visual representations, posters; to reflect on the limits of communication on research contexts and emphasize the pertinence of visually exploring objective data through multiple perspectives, as if interviews carried out in a natural language, eminently visual. They are, in this sense, like illustrations without the mandatory requirement of a unique meaning or explanation – impressions – which tell us as much about the data as about the authors, by merging content and container, message and author.

63560 11:50-12:15

Rising Up: Student Learning in the Post-pandemic Era

Laura Galloway, University Massachusetts Global, United States

Since the start of the pandemic, the University of Massachusetts Global (UMG), like all virtual and dispersed learning institutions of Higher Education, has been forced to adapt to unplanned cycles of change. UMG is committed to improving the learning environment based on a combination of data points, like student feedback and performance and the evolving demands of the job market. Due to the unusual circumstances created by the pandemic, we at the School of Business listened with greater intent and widened the scope of information gathering during this time. What we have discovered are the ways in which student learning consequent learning structures will and will need to involve post-pandemic. This presentation will share the common themes extrapolated from this extraordinary data-gathering effort. During this presentation, we will share the thematic findings of studying student feedback of over 250 courses. With this deeper insight into the evolving needs of students, we have begun the process of reinventing supportive learning structures that foster, inspire and lead to student resilience in this post-pandemic phase.

12:30-13:20 | Room 115

Friday Onsite Parallel Session 2

Culture & Heritage

Session Chair: Marina Peres

64364 12:30-12:55

Shapes of Portuguese Heritage and Visual Culture

Marina Peres, Dubai Institute of Design and Innovation, United Arab Emirates

This study explores the cultural heritage between Portuguese colonial places through the creation of visual narratives. Cultural processes are communicated through the decoding process of visual codes of multiplicity in semiotic conditions and occasions (Eco, 1976). Portuguese buildings, facades, graphic creations and artefacts, scattered around the world, are part of Portuguese colonial history. As well as Portuguese discoveries, they left a vast visual heritage spread across the world. Goa, Malacca, Macau, Muscat, have rich and unique visual expressions as genuine symbols of Portuguese heritage. Visual culture is understood as a system of pictorial and graphic creation. Monuments, houses and traditions, bring together visual influences that the Portuguese, in the past, applied creatively. Objects, shapes and other visual references acquire their meaning, relating values and sociocultural conditions that transform them into vehicles for the affirmation of an identity. This research is focused on a historical and visual legacy approach to identify symbolic and expressive forms of a common culture. A database was created with fragments collected from the visual heritage. Secondary research reflects the importance of locating in time and place a nation's history. It also highlights the importance of national heritage throughout the world. This article aims to contribute to the creation of a visual, formal and cultural database of Portuguese heritage, developing a visual grammar of cultural patterns and concepts contributing for the dissemination of Portuguese legacy around the world.

64414 12:55-13:20

Designing Meaningful Experiences With the Power of Bearers and Mediators of Intangible Cultural Heritage: A Safeguarding Approach With Digital Technology

Javier Martinez, Universidad Industrial De Santander, Colombia

Maria Paula Florez, Universidad Industrial De Santander, Colombia

Steffy K Ballesteros, Universidad Industrial de Santander, Colombia

The intersection between the discipline of design, digital media and intangible cultural heritage (ICH) have created a dimension with new opportunities to support museum activity, negotiating benefits for each sector, exploring and proposing methods of dissemination and divulgation. This research provides an approach to interdisciplinary splicing through a case study that methodologically articulates with Participatory Design and Design Thinking, the design of significant experiences through the digitisation of intangible cultural heritage of cane and panela in Güepsa (Colombia) specifically, the value of mediators and bearers. This ICH was represented from silent (conceptual) videos and disseminated through an augmented reality application (digital product of CUNYAYA- Cane and Panela Interpretation Center). The experiences were evaluated with a qualitative analysis directed by the researchers towards mediators and bearers, through workshops and interviews. From these results, the authors present conclusions regarding the power of mediators and bearers in transmitting recognition, value and heritage admiration, and transcendently influencing the emotions and empathy of external actors to this intangible cultural heritage.

14:20-15:10 | Room 115

Friday Onsite Parallel Session 3

Visual Arts Practices

Session Chair: Ana Almeida Pinto

62581 14:20-14:45

The Effectiveness of Integrating Metal and Textile to Creating Contemporary Artworks Inspired by Egyptian and Saudi Heritage

Nouf Alsuwaida, University of Hail, Saudi Arabia

Lobna Abdel Aziz Mohamed Bayomi, University of Kafr El-Sheikh, Egypt

The heritage expresses the link between human beings, their land, and their culture; it correlates the present with the past and gives promise of the future. It means to gain knowledge, experience, and skills and provides the opportunity to create, develop, and innovate. Thus, this study investigates the effectiveness of integrating metal and textile to create contemporary artworks inspired by Egyptian and Saudi Heritage. It also addressed a geographical and historical introduction to Saudi Arabia and Egypt and reviewed some traditional folk crafts, code, decoration color, and symbolic meanings. Then the researcher, on the practical side, designed innovative, applied to the art and used some of the decorations, the popularity of Egyptian and Saudi heritage, and the development of a range of modern designs and Artworks. The research adopts the descriptive and same experimental method and practical procedure by designing, borrowing, and inspiration—analysis of specific traditions and the methods of their ornament. Recommendations are given for practical ways other Art & Design faculty can build their art from heritage.

63225 14:45-15:10

Eco – Handmade Solid Brick In Contemporary Sculpture

Ana Almeida Pinto, University of Porto, Portugal

Sofia Ponte, Universidade Europeia, Portugal

The demands of collaborative processes in contemporary sculpture, the current impermanence of the sculptural object, the greater need for art practices autonomy combined with the development of supplementary sustainable working methods are some of the most pressing challenges a few artists are facing today. This article reflects on the traditional manufacturing method, and architectural usage of solid bricks and its manifestations in contemporary sculpture. By doing so it aims to examine some of the poetics and complexities of the 21st century. This approach is part of a legacy of contemporary art practices, of artists such as Per Kirkeby, Jacques Kaufmann, and Cristina Gallizioli & Marco Ferrari, that seek to revitalise, appropriate and/or problematise the vernacular technology embedded in certain territories, and the living standards they represent. The collaborative art project Eco by artist Ana Almeida Pinto was born during the Covid-19 pandemics in the south of Portugal, with the aim of creating artworks through a self-sustainable circular economy system that included the handmade production of solid bricks. Two different socially engaged artworks — Aventura Gráfico (2022) and Do Monte à Avenida: Apropriações Circadianas (2022) — emerged from this process. Each was shaped by the artist and people from local communities in the city of Montemor-o-Novo and Porto and exhibited temporarily in each city. The process of making Eco, and the artworks born from it, provides an opportunity to reflect on the current meanings of ancestral production processes while contributing to a deeper understanding of contemporary sculpture.

15:25-16:40 | Room 115

Friday Onsite Parallel Session 4

Culture & Heritage /Interdisciplinary Local Art & Design History

Session Chair: Javier Martinez

64415 15:25-15:50

Curiosity as a Bridge for Free Choice Learning: Museum Experiences Designed Using Projection Mapping Technology at Cunyaya, Interpretation Center

Javier Martinez, Universidad Industrial De Santander, Colombia

Andrea J Rangel, Universidad Industrial de Santander, Colombia

Steffy K Ballesteros, Universidad Industrial de Santander, Colombia

The search for an interactive and learning environment through museographic artifacts, which by themselves highlight the feeling of curiosity to the visitor, is a challenge for interpretation centers around the world. This article highlights the importance of generating a relationship between an interactive technology such as Video Mapping and the feeling of curiosity as a direct bridge for autonomous learning that is given by the human need to obtain new information and answer the questions that invade us every day. Using Design Thinking and User-Centered Design Methodologies (UCD), the evocation of experiences and determining sensations between the public and the museographic artifacts that in the future contribute to the safeguarding of intangible cultural heritage is proposed. This contribution focuses the research on the cultural and social context of the trades exhibited in CUNYAYA: Centro de Interpretación de la Caña y la Panela in the municipality of Güepesa, Santander - Colombia.

64154 15:50-16:15

Lettering Design in Raul Lino's Work: Humanism, Nature and Tradition in Architecture, Graphic Arts and Design

Regina Delfino, Polytechnic Institute of Tomar, Portugal

Pedro Matos, Polytechnic Institute of Portalegre, Portugal

Inês Serrano, Polytechnic Institute of Tomar, Portugal

Anabela Moreira, Polytechnic Institute of Tomar, Portugal

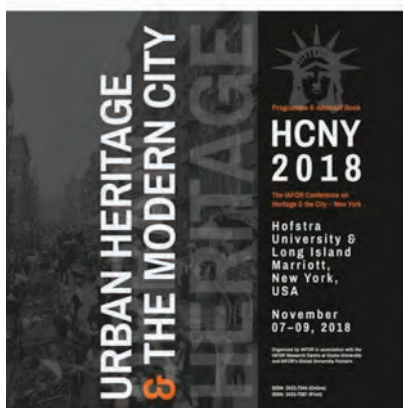
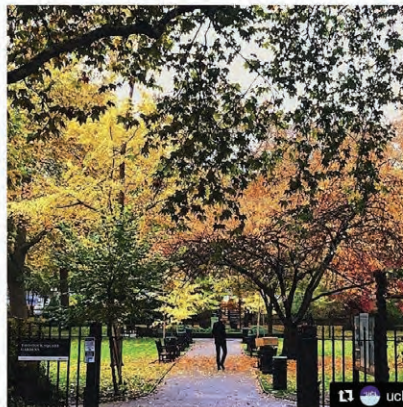
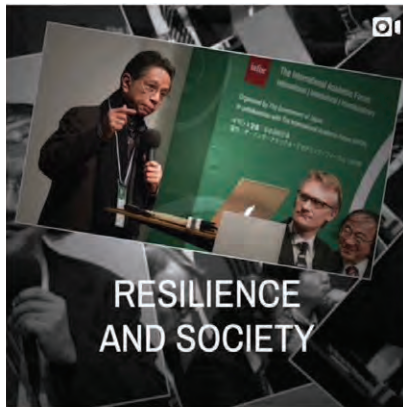
Raul Lino's work is often connoted with the image of Estado Novo and with "Português Suave", an architectural style with a partly degenerate and retrograde taste. However, this view does not consider that a part of his most important work, which in addition to architecture covers various decorative arts, was developed before that Portuguese dictatorial period; just as it tends to forget the centrality of its humanist and naturalist character. This study analyses the graphic work of this architect, in particular the lettering, which covers periodicals and book publishing, architecture or graphic brands. Much of this work is linked to education, due to the relationship that Lino established with the writer Afonso Lopes Vieira and his children's literature, or with the João de Deus Kindergarten. This less studied part of Lino's work not only reflects the idea of a total work of art, of integrity and application of values and beauty to everyday life and its artefacts; as it underlines the importance given to calligraphy; or to the mixture between erudite and popular tastes, of national or regional nature. Recovering these values is urgent today, insofar as the digitization of reality and our day-to-day life, even if inevitable and partly necessary, has tended to relegate the importance of craftsmanship, of Man's relationship with nature and a way of thinking linked to the body and to doing. And as has been proven, these values are decisive in the construction of straight, creative citizens with respect for Others, Nature and the Earth.

63274 16:15-16:40

Invisible Resilience: Interiority of Body and Architecture

Amos Bar-Eli, HIT - Holon Institute of Technology, Israel

COVID-19 is by no means the first epidemic that storms through the human population. The presence of mysterious, unpredictable, paralyzing health concerns is actually determinate of the way we understand and create architecture. It is very much so in the way interiority of architecture, with its obsessive emphasis on space and function, became prominent during the previous century. Architecture shifted its focus from exteriority to interiority, from protection against exterior elements to safeguarding from interior, invisible, hazards. Primary, among which, are: the internal body (skeleton), the microscopic (cell), and the subconsciousness (brain). These 20th-century central paradigms, closely associated with health and health-related technology, continue to evolve today. The paper exposes the body's internal and invisible elements that establish a path for understanding the interior (of) architecture. It explores the way design preferences for transparent, simple, and light, are highly concerned with health and technology. The paper explores the emerging roots of this phenomenon within the Modern movement and proceeds to show its relevance for contemporary design. It claims that resilience of the body in face of health concerns has much to do with how interior architecture is theorized and designed. It takes an associative and anecdotal, rather than linear, journey through historical and contemporary case studies strengthened by examples from the art world, in an attempt to shed light on the phenomena.



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Saturday, July 09

Featured Presentations & Parallel Sessions

All times are in Western European Summer Time (UTC+1)

Abstracts appear as originally submitted by the author. Any spelling, grammatical, or typographical errors are those of the author.

Keynote Presentation: Mirian Nogueira Tavares

Against the Method: Recovering the Senses in the Age of Hyperformatting

Saturday, July 09 | 09:30-10:00 | Room 101 & Online

In 1975 the philosopher of science Paul Feyereabend wrote a work that, even today, provokes reactions: *Against the Method*. In the first edition, the book contained a subtitle: "Outline of an anarchic theory of the theory of knowledge," which no longer appears in the 3rd edition revised by the author. In fact, with each new edition, the author revised, added and slightly altered the ideas that were initially shaped and which, according to him, was an incomplete work. Written as a letter to his friend Imre Lakatos, who died before he could give an answer that would also come in book form, *Against the Method* proposes a counter-method, or an anarchist epistemology, which called into question the positivism of science, and of the Academy, and proposed to restore chaos. A chaos producing divergent thoughts, which approached science as a complex, historical and philosophical whole.

Also, in the '70s, Edgar Morin began to write his most monumental work, three volumes which he generically called *The Method*. In the first volume, *The Lost Paradigm: Human Nature*, he presents his method, also a counter-method, for the understanding of science, and why not, of the world that formulated it. Complex Thought assumes the etymology of the word Complexus, from Latin – that which is woven together, to affirm that it is not possible to segment knowledge, that it exists in relation.

I intend to approach the question proposed by Feyereabend and, in another way, by Morin, to inquire the direction in which teaching, and the issues related to it, are taking in a contemporaneity too tied to technical thinking and a unidirectional view of scientific knowledge. Will we be able to continue teaching, despite the methods? Is there possible learning that is not measurable and not accounted for?



Mirian Nogueira Tavares

Mirian Nogueira Tavares is an associate professor at the University of Algarve, Portugal. With an academic background in Communication Sciences, Semiotics and Cultural Studies (she received a PhD in Communication and Contemporary Cultures from the Federal University of Bahia, Brazil), she has been developing her research work and theoretical production in the areas of film and artistic aesthetics. As a professor at the University of Algarve, she participated in the development of the Visual Arts degree program, the Communication, Culture and Arts Master's and Doctorate programs, and the Digital Media-

Art Doctorate program. She is currently coordinator of the CIAC (Center for Research in Arts and Communication) and Director of the PhD in Digital Media-Art.

Keynote Presentation: Susana de Noronha

Experiential Knowledge + Science + Art = Creative Ethnographic Drawing

Saturday, July 09 | 10:00-10:30 | Room 101 & Online

Can a new format of illustrated social science, combining text and image, using visual and creative methodologies, facilitate and reinforce the outcomes and impact of our research in matters of health and illness? This presentation describes the outline and the heuristic possibilities of a novel qualitative methodology – creative ethnographic drawing – a hybrid approach I've been developing for the past five years. This transdisciplinary methodology evolved from a postdoctoral anthropological investigation focusing on the stories of Portuguese women with diverse cancer experiences, analysing how illness, resistance and death were experienced and conceptualised. With a view to a reinforced understanding of cancer, it underlines the experiential knowledge of those who live and feel it, patients, survivors, and bereaved relatives, bringing to the discussion whatever was regarded as relevant from their point of view. Combining firsthand experience and social science, enhanced by art, this methodology integrates embodied reasoning, speech, and drawing in the core of the investigation, using them as methodological resources and forms of knowledge, using my interlocutors' words and stories to create a meaningful sequence of images.

With the potential to democratise science, producing a more accessible, readable and visible form of knowledge, creative visual methodologies can also broaden the way social studies understand reality and take action, diversifying what we can say, show, and do. Refusing their accessory or secondary participation in science, I use the ontological, heuristic, epistemological, and performative resources offered by artistic and visual practices, considering them as possible extensions of experience, that is, a part of the way illness can be felt, understood, and managed. Linking medical anthropology to the possibilities of a hybridization of ethnography, art, and visual methods, I emphasise what we can find in that combination. Methodologically, however, the drawings and paintings go beyond what is conventionally understood as scientific illustration. By adding metaphor and imagination to the creative process, with the use of specific shapes and colours, I was able to materialise ideas and facts that otherwise would not be translatable into conventional realistic illustration, aiming to broaden and facilitate the reader's and viewer's comprehension.

Resulting from informal conversations, the drawings are understood as collaborative and co-authored creations, bearing the names or pseudonyms of my interlocutors, seeking a balance between writing and speaking, reaffirming the undivided roles of the researcher and the interviewees in their conceptual formulation.

[Dr Susana de Noronha's biography is provided on the following page.]



Susana de Noronha

Susana de Noronha, Anthropologist and PhD in Sociology, is Researcher at the Centre for Social Studies (CES), University of Coimbra, Portugal, Secretary of CES General Assembly, and member of the Editorial Board of the CES/Almedina Book Series. Between 2020 and 01/2022, she was Co-coordinator of the Science, Economy and Society Research Group (NECES) at CES. She is also an Invited Assistant Professor at the Department of Sociology, University of Minho, Portugal, and has been an Invited Professor in the Network of Post-Graduate Programs of the Latin American Council of Social Sciences (CLACSO) since

2019. Currently, she is a team member of the International Project "Visibilizing Pain: Illness Visual Narratives and Storytelling Transmedia" (coordinated by the Universitat Internacional de Catalunya-UIC, Spain) and Ambassador for Portugal of the Association for the Study of Death and Society. She was distinguished by an international jury with the 2007 CES Award for Young Portuguese-speaking Social Scientists and winner of the 2003 Bernardino Machado Award for Anthropology by the University of Coimbra. Author of three research monographs: *A Tinta, a Mariposa e a Metástase: a arte como experiência, conhecimento e acção sobre o cancro de mama* (2009, Afrontamento) [Paint, Butterflies, and Metastases: art as experience, knowledge, and action on breast cancer]; *Objetos Feitos de Cancro: mulheres, cultura material e doenças nas histórias da arte* (2015, Almedina) [Objects Made of Cancer: material culture and illness on women's art stories]; and *Cancro Sobre Papel: Estórias de oito mulheres Portuguesas entre palavra falada, arte e ciência escrita* (2019, Almedina) [Cancer on Paper: the stories of eight Portuguese women in words, art, and science]. As a writer and researcher, she is also a published lyricist and author of scientific illustrations, using photography, painting and creative ethnographic drawing.

11:00-12:40 | Room 111

Saturday Onsite Parallel Session 1

Interdisciplinary Art & Design Projects

Session Chair: Julie Smith

63885 11:00-11:25

Conceptualising, Designing and Implementing a Scented Adventure Trail for Kindergarten Children

Natalia Kucirkova, University of Stavanger, Norway

Elisabeth Stray Gausel, University of Stavanger, Norway

Smell is a key sense for navigating the environment but in comparison to visual or auditory senses, the sense of smell has been neglected in research more broadly and children's education more specifically. This design-research study is part of a large-scale project funded by the Research Council of Norway, which aims to explore how smell affects children's learning. Drawing on insights from early childhood education, design thinking and reading studies, seven purpose-built olfactory boxes were designed. The boxes emit abstract and concrete smells and are part of an olfactory story exhibition for Norwegian children of kindergarten age (3-5-year-olds). The children were invited to embark on an adventure trail that followed the traditional story The Three Little Pigs with interactive resources, including the olfactory boxes. In our paper we report on the exploratory, multi-level mixed methods approach to create the olfactory boxes by addressing the research question: How can smell be implemented in story-related activities for kindergarten children as an approach to enhance their engagement in public exhibitions? We outline the central elements of the multisensory theory that guided the development of the olfactory boxes' main features. We discuss how the use of various smells and scents added an extra dimension to children's experience of a traditional fairy tale. We conclude with implications for multidisciplinary research methods and olfactory design.

63242 11:25-11:50

Itinerant Spherical, Flat and Concave Surfaces: Disseminating Human Echolocation in Public Spaces

Gustavo Romeiro, University of Porto, Portugal

Sofia Ponte, Universidade Europeia, Portugal

Human echolocation is an empowerment skill for the unsighted, yet it remains unknown for most western societies. Consequently, it is not spread enough as a standard way for training the mobility and autonomy of the blind. The Itinerant spherical, flat and concave surfaces is an art and design project created to address this complex issue. This paper covers the research methods developed to design and implement this project during the Covid-19 pandemic early waves, in 2020-2021. It is composed of three hybrid objects, temporarily placed in public spaces for inducing human echolocation trials and experiences. The curiosity and consequent experimentation of passersby is used as a strategy for disseminating information and awareness about this ability. Because the ergonomics for human echolocation perception and training is still a field in exploration, a user centred approach derived from Design Thinking methodology was addressed. An artistic approach was also considered to stabilize the physical aspects of the device and to help make its uncanniness in public space acceptable. The project was temporarily placed in the cities of Funchal and Porto, in Portugal. It was during the contact with passersby in each of these cities that the hybrid nature of this art and design project was revealed. It highlighted the great potential of current public art to address political, social and cultural aspects of western societies, bringing simultaneously more awareness and empathy to the challenges faced by unsighted citizens.

64411 11:50-12:15

Reference Framework for Tacit Knowledge in Craft-based Manufacturing Processes, for Updating Their Practices With Digital Interventions. A Systematic Review

Jesus Alexis Machuca Gelvez, Industrial University of Santander, Colombia

Clara Isabel Lopez Gualdron, Industrial University of Santander, Colombia

Luis Eduardo Bautista Rojas, Industrial University of Santander, Colombia

This study aimed to build a framework to define key attributes in the tacit knowledge of craft-based manufacturing processes, used to update the technique through digital interventions. Currently, with the integration of CAD/CAM technologies into craft-based processes, the development of new products is possible, but it is important to recognize the prior tacit knowledge and how they can be integrated with digital manufacturing. through a systematic literature review methodology by bibliometric technique focus on identifying case studies. Web of Science and Scopus databases was tool search and the information was analyzed in nvivo® software for content analysis. The review indicated that technological interventions in craft-based processes take into account aspects present in the skills and experience of expert people who master a technique, as well as manual gestures, strength, and movements performed during activities of the crafting process, and that allows the transformation of a material into an artifact. On the other hand, the content analysis allowed tacit knowledge to be categorized into four key attributes: material knowledge, technique knowledge, skills, and body movements. It is concluded that to carry out a digital intervention in a craft-based process that allows guarantees the reliability of the technique, the responsible integration of the tacit knowledge of the technicians or craftsmen who dominate the process is necessary. In addition, it is concluded that despite the efforts made in the studies, not all tacit knowledge can be translated or integrated into digitization or automation, especially regarding decision-making and body gestures.

63646 12:15-12:40

STEM to STEAM – The Effects of Incorporating the Arts into STEM Education

Julie Smith, Loyola Marymount University, United States

The integration of art into Science, Technology, Engineering, and Math classes (STEM to STEAM) is a trend in Southern California STEM schools. This is especially the case since there has been an epidemic of student misbehavior issues affecting classroom management. For a number of reasons, including changes in the support of parents and administrators in dealing with student misconduct, teachers are increasingly left to their own devices to handle classroom incidents. This in turn has resulted in many educators leaving the profession, some even in the middle of the academic year. Mid-career professionals, who have too much invested in a defined benefit program (pension) who feel they cannot financially cannot leave public education, are turning to old and new avenues of quelling disobedience and acting out. By incorporating animation, design, and "old school" cutting and pasting art activities as part of the regular curriculum, they have discovered or rediscovered teaching techniques that have a positive effect on student conduct. These effectively complement STEM education. Because arts inclusion can create a calming effect on young and older people, it not only enhances student understanding of the subject matter but can have positive social emotional consequences as well. In this presentation and paper, modalities of arts integration will be explored.

13:40-14:30 | Room 111

Saturday Onsite Parallel Session 2

Design & Local Industries

Session Chair: Pedro Almeida

64389 13:40-14:05

Design by Extension – Potentiating University-industry Collaborations Through Active Learning

Luís Ferreira, Universidade de Aveiro, Portugal

Abhishek Chatterjee, Universidade de Aveiro, Portugal

Pedro Almeida, Universidade de Aveiro, Portugal

Emanuel Oliveira, Universidade de Aveiro, Portugal

This paper introduces a Project-Based Learning (PBL) led collaboration between the University of Aveiro and 'Nexx,' an eminent brand of motorcycle helmets from the Aveiro district of Central Portugal. It delineates the main reciprocal advantages that are emerging from such interface between university and industry and discusses how projects that are framed to address specific industry needs can provide an enduring basis for knowledge and technology exchange. The brand Nexx is among a handful of remaining European manufacturers of motorcycle helmets and riding gear, and its offerings cover a wide range of segments such as urban and off-road. The brand's global appeal means that 90% of its production is destined for export to 60 markets worldwide. Its interest in collaborating with universities, and specifically, design education stems from its commitment towards effectuating consistent innovation in products and processes, wherein external perspectives, and in particular, creative vision can prove strategic and impactful. Respectively, the paper specifies the context of Nexx's collaboration with the undergraduate program in Design at the University of Aveiro, which concerns the design of sustainable helmet packaging. It also reflects on how such collaborations present critical opportunities for educators to extend design classrooms beyond the university and into environments that are conducive to active learning. In this regard, the paper posits that such design challenges with the potential for tangible outcomes can stimulate further inquiry and exploration of methodologies and approaches which can aid in closing the gap between academic and empirical knowledge in the field of design.

64390 14:05-14:30

Sustainability, Aesthetics, and Value Proposals and Practices of Colombian Slow Fashion Brands

Daniela Ordoñez Suárez, Universidad Industrial de Santander, Colombia

Miguel Enrique Higuera Marin, Universidad Industrial de Santander, Colombia

Carolina Raigosa Díaz, Unidades Tecnológicas de Santander, Colombia

The Slow Fashion model emerged as a sustainable approach in the fashion industry through characteristics like localism, equity, authenticity, exclusivity, and functionality. The objective of this study was to identify proposals, and practices of Colombian brands, in terms of brand identity, aesthetics and timelessness, sustainability, and communication strategies. For this purpose, we chose a qualitative approach by observation and analysis of the information that brands provide on their social networks and official websites. The study included 38 Colombian slow fashion brands of women's casual-wear clothing, and whose prices do not exceed US\$90. The results include aesthetic proposals inspired by visual elements of the country's flagship cities, as well as the construction of a style brand identity through artistic expressions and collaborations with Colombian illustrators for their prints. Aesthetics meets social sustainability by applying manual and artisanal techniques together with indigenous and artisan communities, and mothers who are heads of households. Also, these strategies provide a timeless character due to their cultural recognition. On the other hand, environmental sustainability is approached from technical factors such as the material, and the management and use of textile waste. Overall, this study allowed us to identify the diversity of approaches influenced by the sociocultural context of the brands, in addition to visualizing opportunities for the intervention of the design discipline in the strategies for communication of the value proposition. Further research could analyze local consumers' perceptions, needs, and criteria to opt for purchasing Slow Fashion brands.

14:35-15:25 | Room 111

Saturday Onsite Parallel Session 3

Design for Society

Session Chair: Eliana Penedos-Santiago

64416 14:35-15:00

Multidisciplinary Relations in the Collaborative Work Practices to the Service Design Process

Sully Viviana Calderon Ortiz, Industrial University of Santander, Colombia

Clara Isabel Lopez Gualdron, Industrial University of Santander, Colombia

Javier Mauricio Martinez Gomez, Industrial University of Santander, Colombia

Collaborative work in the health sector is a popular method of user perception research, however current design processes lack the adequate structure to establish bases and patterns that define the evaluation metrics. We conducted three different collaborative work practices: interviews, observation processes, and surveys to contribute to the presurgical service specification. The practices were conducted to identify needs, focus, and expectations related to the medical practice's presurgical workflow.

The interaction was documented specifically between the design team and specialists in the surgical field. The multidisciplinary articulation shows the common language need and the workflow complexity related to the surgical context. This research process observed key behavioral relationships between the design team with the key actors involved and how they interacted. We observed how central relationships improved the overall structure of the health system and how the support service can contribute to surgical service improvement. This article contains the synthesis of the interaction results, how the articulation between the design team and the physicians was conducted, and the contribution level to the conceptualization needs. The results were documented in terms of process efficiency and evaluated variables such as the reprocess quantity, the interaction time, and the quality of information. The collaborative work was evaluated in terms of efficiency and the process related to the interaction between two different areas of knowledge. It's recommended that kinds of practices were evaluated constantly to establish the average contribution in the service design process and how could be handled in the multidisciplinary context.

63689 15:00-15:25

Design for Healthcare Facilities Management: A Way Finding Project for the Braga Central Hospital's External Care Unit

Eliana Penedos-Santiago, ID+ / University of Porto, Portugal

Pedro Santiago, University Fernando Pessoa, Portugal

Sérgio Correia, esad-idea / Escola Superior de Artes e Design, Portugal

This paper stems from a 4-year way finding design project conceived upon request of Braga Central Hospital in Portugal. In the year of 2014, the Hospital reported that 30% of the patients failed to attend previously scheduled appointments at the Hospital's External Care Unit. According to a survey conducted among the patients, this failure was predominantly due to disorientation caused by the lack of signage. This project aims to correct this communication obstacle, thus improving healthcare management by increasing the efficiency of the medical services streams. A service design methodology was used through a service blueprint, to map circulation flows, processes and systems that take part of the medical experience provided by the hospital. Design research methods, including informal interviews and focus groups with health professionals and hospital staff, were also implemented. The implementation of both orientation and identification way finding objects was gradual, divided into 4 separate stages: (i) external accesses to the hospital External Care Unit, (ii) stairs and lifts with exclusive access to and within this unit, (iii) hospital five floors' receptions and general circulation areas and (iv) medical specialties restricted circulation areas. In 2017, the Hospital was granted the maximum score, by the Portuguese National Health Assessment System, in Clinical Excellence, Safety, Satisfaction and Focus on the Patient and Adequacy and Comfort of the Facilities.

11:00-12:40 | Room 113

Saturday Onsite Parallel Session 1

Strategies for Promoting Creative Thinking

Session Chair: Vincenzo Maselli

64397 11:00-11:25

Creative Strategies for the Communication of Science in a Context of Digital Hegemony: Experiencing Hands-on Visual Arts Techniques

Santiago Mourao, University of Porto, Portugal

Heitor Alvelos, University of Porto, Portugal

Najla Leroy, University of Porto, Portugal

This paper seeks potential benefits of technical and technological revisitation as a mechanism for aesthetic and narrative improvement of communication processes. In the context of science and technology communication, we seek to influence new strategies towards the promotion of scientific knowledge in a context of digital hegemony. The epistemological standpoint is largely based on media archeology, as a "way to investigate the new media cultures through insights from past new media" (Parikka, 2012). Two ongoing doctoral studies (in Design and Fine Arts) will ensure an exploratory workshop as a way of encouraging participants to exercise new approaches to communication through an analogue medium: the fanzine. The making of the fanzine will be collective, and will be completed in two stages: experimentation with printing techniques (stamps, stencils, monotype and photocopying), and graphic production (editing, reproduction, assembly and binding). From this revisitation of analogue visual communication practices, often considered obsolete, the research intends to reveal the processes of analogue mimicry present in digital image editing software. Furthermore, the research points towards the materiality and specificity of print media as a singular environment for the construction of discourse and knowledge.

63269 11:25-11:50

Material Design and Audio-visual Narratives for Pedagogy: Theoretical Premises and Evaluation Tools for Experimenting Stop-motion Animation as Teaching Method

Vincenzo Maselli, Sapienza - University of Rome, Italy

Since the early 1900s the pedagogical research has matured a materialist perspective, recognizing the essential contribution of creative practice and material experience within learning paths. Starting from John Dewey's philosophy of experience (1938), passing through Maria Montessori and Bruno Munari's experimental teaching methods, Riccardo Massa's "educational materiality", to the most recent socio-material approaches, pedagogy has embraced the relationship between human beings, material art and experience design. These studies have explored and theorized how learning and knowledge are rooted in actions that encourage creativity, cooperation and reflective thinking. By starting from this theoretical framework and taking up the educational objectives formulated by the OECD for 2030, the proposed paper illustrates the methodological and technical coordinates of the research project "CCODE - Design, material experiences and stop-motion animation as didactic tools for developing creative thinking and cooperative learning", that suggests an experimental learning method based on the theories of storytelling and stop-motion animation tools, thus amplifying the educational value of this art form. The understanding and analysis of a narrative text, its transposition into a screenplay, the material manipulation and the stop-motion animation process are the phases described to structure an unprecedented and interdisciplinary method of acquiring theories, techniques and develop socio-emotional-cognitive skills. The paper therefore aims at disseminating the project's premises and ethical implications and describes both the afore-mentioned experimental teaching module based on learning by doing (Bruner 1966, Dale 1969) and the evaluation tools carried out in different phases to validate the approach, the method and the educational objectives achieved.

64367 11:50-12:15

Systematic Thinking

Marina Peres, Dubai Institute of Design and Innovation, United Arab Emirates

Design Thinking methodology is a systematic approach and global strategy to create innovation and change. Based on the relationship for the search for the ideal product (as an innovative product), is the spot at the intersection of the desire (user), technological viability and economic viability, and involves five main phases on its process. This paper brings together different approaches, methods, tactics and tools on systematic thinking and co-creation activities. As a workshop format, participants working together to unpack thoughts and experiences into tangible and visual pieces of information. Using and extra value of engaging with real people to help them ground their design decisions. Divided in for main areas or approach, this methodology starts with "Empathy", a deep understanding of the needs, ambitions and motivations of the "actor". A systematic and empathic approach promotes a deep understanding of the problem and promote co-creation. Problem statement (or Mission Statement) are defined to narrow down the broader design challenge. Ideation and through abstraction, several ideas on how the user problem can be solved. Prototyping (low fidelity or early prototype), enhance potential solutions to test it with real users on last phase. Multidisciplinarity teams is a value add for co-creation. The approach to participatory design, experimentation and co-creation promotes team collaboration and knowledge sharing but as well, stakeholders

63097 12:15-12:40

The Role of the Brief in Individual Versus Collaborative Design Ideation

Hernan Casakin, Ariel University, Israel

Georgios Koronis, SUTD-MIT International Design Centre; University of Technology and Design, Singapore

Arlindo Silva, SUTD-MIT International Design Centre; University of Technolo, Singapore

Design is a wicked activity often demanding cognitive skills such as creative thinking. The way design briefs are framed, and the kind of information provided in them can affect the design outcomes' creativity. However, the aid provided by the briefs when students work individually or collaboratively to generate creative solutions might differ, and has yet to be explored. The study was aimed at means to enhance design students' creativity when the representation of the briefs is manipulated. The main goals were to analyse the creative outcomes produced in different brief conditions by comparing: i) individual design sketches alone; ii) collaborative design sketches alone, and iii) individual versus collaborative design sketches. An experiment was carried out in a course activity in which design briefs were characterized by: Abstract information, detailed Contextual information, a Physical model example, and instructions to use Fishbone diagrams (a problem framing strategy). A similar design problem was given to the students, who were asked to sketch creative ideas on a daily-used product. 274 first-year undergrads belonging to the engineering and architecture track took part in the study. First, they dealt with the task individually, and then they worked as a team, producing 672 ideas in each situation. It was found that irrespectively of the information of the brief, the novelty and usefulness of the sketches produced collaboratively were significantly higher than those produced individually. When students dealt with the task individually, results showed significant differences in the aid provided by the different briefs.

13:40-14:30 | Room 113

Saturday Onsite Parallel Session 2

Interdisciplinary Arts & Education

Session Chair: Patsy Iwasaki

63757 13:40-14:05

Tragedy to Triumph: Utilizing a Graphic Novel and Instructional Design to Sustain the Culture, Heritage and Resilience of a Community

Patsy Iwasaki, University of Hawaii at Hilo, United States

Arts, design and education can powerfully combine to create relevant and impactful place-and community-based educational resources that engage interdisciplinary approaches and perspectives. This study will discuss the multiple setbacks, including COVID-19 upon a community, and explores how an original graphic novel about a 19th century labor advocate is utilized to educate and promulgate the heritage, culture and resilience of the area. The Hāmākua Coast of Hawai'i island has a long history of migration from Asia and Europe since the 18th century. Workers from China, Japan, Korea, the Philippines, and Portugal were recruited for the numerous sugarcane plantations. However, the once thriving region has been impacted economically and emotionally with the demise of the sugar industry, highway infrastructure, and the COVID-19 pandemic. Community organizations pivoted and addressed food security. The community also came together in resiliency when it honored the legacy of Katsu Goto in 1994, building a memorial, and annually commemorating him as an early champion of labor, not a victim of racism and oppression when he was lynched and hung in 1889 for his advocacy of plantation laborers. This qualitative study reveals the instructional design of utilizing a graphic novel about Goto to create an educational module with the aim of creating important connections and a sense of place, pride, and healing for a community experiencing adversity. An instructional design model guided five instructors with the module design and a motivational model provides the framework to analyze the data collected. This study is intended to contribute to sustaining the heritage, culture and resilience of the region and give insight to others.

63741 14:05-14:30

Teaching about European Heritage – The Case of Polish European Heritage Label

Kinga Anna Gajda, Jagiellonian University, Poland

Bożena Gierat-Bieroń, Jagiellonian University, Poland

The definition of cultural heritage given in the Faro Convention emphasizes the active role of individuals and communities in its maintenance and transmission to future generations. It points out heritage should be strengthened and promoted as a driving force for active engagement and social responsibility. And responsible for this promotion should be, inter alia, formal and informal education. The purpose of heritage education is to use the past to construct a contemporary identity, raise awareness of common history and values, and strengthen the sense of belonging to a common European cultural space. It is education that is responsible for making students aware of their own heritage based on a dialogue with the heritage of other nations, the past, and the present. This education should take place at all levels of education. Heritage education is not a school subject with its own curriculum, specific learning goals, and key concepts. This purpose is served, inter alia, by cultural heritage labels that emphasize "the richness and common aspects of European culture". The aim of the paper is to present three models of teaching about European heritage based on Polish European Heritage Labels (EHL): the concept of education about national memory, the concept of education about plural memory, and the concept of education about uni-memory.

14:35-15:25 | Room 113

Saturday Onsite Parallel Session 3

Interdisciplinary Arts & Education

Session Chair: David Allen

63768 14:35-15:00

Teaching Without Student Feedback: The Lack of Nonverbal Communication in Online Design Education

Zeynep Arda, Izmir University of Economics, Turkey

Hacı Yakup Öztuna, Dokuz Eylül University, Turkey

Estela Bernad Monferrer, Universidad Jaume I, Spain

Cesar Fernandez, Universidad Jaume I, Spain

Teaching is not only a transfer of specific information from a more experienced generation to newcomers, but also a complete act of referential communication that takes place between the teacher/instructor and the students. While current debates on metaverse and digital life seem to center on the ethical, economical and legal aspects of possible futures, earlier discussions relied strongly on the transition as we would detach ourselves from the cities. The COVID-19 pandemic gave us a glimpse of such detachment, when we all experienced a significant spike in our screen times. And yet, considering the services that keep the cities intact like education, health and culture, in design education, decentralization was tested through the online classes. This research aims to evaluate in-depth data from undergraduate students and instructors focusing on the loss of nonverbal communication cues. The authors' teaching experiences suggest that the paralingual/nonverbal feedback from the students change the way a class is taught in substantial ways and the lack of it creates a huge gap in the communication between the two parties. Having collected data from universities in Turkey and Spain, we aim to discuss the possible transformations in design education in the virtual worlds of the future.

62678 15:00-15:25

Investigating Reciprocal Relationships in Performing Arts and Learning Processes

David Allen, City University of New York, United States

This paper investigates reciprocal relationships between the performing arts and learning by engaging with performing artists who also teach. The study is conducted through interviews with theater artists, dancers, and musicians who teach in a range of educational settings. The in-depth interviews elicit the performing artists' theoretical, practical, and tacit knowledge of how individuals learn within and through artistic processes. These processes include composition, rehearsal, performance, critique, and practice. It builds upon sociocultural and constructivist theories of learning; theoretical and practical studies of the performing arts; and research in arts education, including the practices of teaching artists. It argues that: (1) The processes in which performing artists engage are learning processes and thus offer rich insights into possibilities for teaching and learning in multiple settings, including but not limited to arts education; (2) These processes demand and develop dispositions that are critical both to artistic creation and learning; these dispositions include attention, openness, imagination, curiosity, playfulness, presence, and reflection. It provides detailed examples from the performing artists'/teachers' practices and perceptions of their practices that illustrate the interaction of performance processes and learning processes. It concludes with implications for how the artistic processes and dispositions may serve as resources for enhancing performing arts practices, as well as arts education and general education practices. It offers questions for future research in how theater arts processes and learning processes intersect and develop.

11:00-12:40 | Room 115

Saturday Onsite Parallel Session 1

Research Methods in Art and Design

Session Chair: William Frick

63283 11:00-11:25

Human-centered Design as a Qualitative Research Methodology in the Area of Public Health

Pierre Yohanes Lubis, University of Canterbury, New Zealand

Bahareh Shahri, University of Canterbury, New Zealand

Conan Fee, University of Canterbury, New Zealand

Mariano Ramirez, University of New South Wales, Australia

This paper builds a deeper understanding of human-centered design (HCD) as a qualitative research approach in the pursuit of generating proper solutions in the area of public health. This study draws similarities and discrepancies between human-centered design methodology and the qualitative research approach. HCD largely emphasizes ethnography, which is inherently qualitative. HCD relies on the effort to perceive the problem from the point of view of the target user just as the qualitative approach frames an issue as they are understood by the people themselves. Both HCD and qualitative approaches are inherently 'bottom-up' by framing a problem as it is phenomenologically situated. However, qualitative research does present several discrepancies with the HCD approach when applied in the field of public health, especially regarding the methods of implementation of their respective solutions. Whereas solutions in the area of public health are typically enforced by 'hard power', in the field of design, solutions are commonly implemented by the use of 'soft power'. This is because public health is commonly perceived to be a 'public good' and therefore it is not considered to be a role that the market can fill. In the design discipline, however, solutions are normally crafted to compete freely in the market. By examining how several solutions provided by the design discipline had been well received in the real-world setting, it goes to prove that HCD can truly be a boon when addressing public health issues.

64032 11:25-11:50

Photographic Mnemotopes: Phototextual Reports as a Research Tool for the Communication of the Memory of Places

Clorinda Sissi Galasso, Politecnico di Milano, Italy

The proposed study refers to Communication Design for the Territory, a discipline that has taken up the territorial theme as its own specific dimension, in conjunction with memory studies, an academic field that investigates memory as an integrated interdisciplinary system, and with photography. The focus is the concept of mnemotope. The term combines two Greek words, mnéme, memory and tópos, place, becoming a plural object of territorial interpretation of various forms and scales that can be categorized in mnemotopes with trauma (e.g., war mnemotopes) and mnemotopes without trauma (e.g., birthplaces of illustrious people, literary mnemotopes). The communication of mnemotopes is essential to manifest their territorial network and to make their cultural value emerge. Photography, given its historical link with the memory of places and its visualization, is one of the most suitable systems for mnemotopic communication, especially in its relationship with textual narratives. For this reason, it has been developed a specific design research tool, the mnemotopic phototextual report, which can enhance the recognition of mnemotopes, express their different typologies, and evoke their immaterial qualities. The report not only merges textual apparatus and visual apparatus in a unique environment but crosses the traditional models used in the academic context for case study research with diaristic narratives and literary travelogues. The paper will show in detail the features of the mnemotopic phototextual report as a valuable tool for describing territories, places, and their memories, on edge between photography and design.

64395 11:50-12:15

The Cognitive Effect of Spatial Contiguity in Procedural Training Using Mixed Reality

Sara Gutiérrez, Universidad Industrial de Santander, Colombia

Luis Bautista, Universidad Industrial de Santander, Colombia

Fernanda Maradei, Universidad Industrial de Santander, Colombia

New technologies such as Mixed Reality (MR) are often used in procedural training to provide information to the trainee. When a trainee is faced with a visual scene, MR shows the information as a set of visual and/or auditory resources. Thus, the apprentice must perceive which resources are directly associated with the task to be executed. For this, the visual attention guide components are important, which have an impact on the improvement of information processing and on the optimization of cognitive resources. The objective of this study is to determine the cognitive effect of one of the visual attention techniques called spatial contiguity on students engaged in a procedural training scenario using Mixed Reality. Through a systematic literature review (SLR), related to the use of graphical user interfaces visual elements or techniques to guide visual attention in training, it was found that there are certain techniques of visual elements that guide the user's attention. Spatial contiguity, color codification, movement, and blinking are the most used. In organizing observed information, cognitive processes beyond attention influence the direction and duration of eye movements; because of this to analyze visual attention processes in the study Eye-tracking is implemented, which is a tool used to record the eye movements of subjects while they perform tasks, this allowed to measure cognitive processing of stimuli from learning materials presented. Statistically significant differences are expected to be found in measures of cognitive processing, based on different forms of spatial contiguity presentations.

63358 12:15-12:40

Architectural Precedent Study: Innovative Methods Education and its Implication for Ethical Practice

William Frick, University of Oklahoma, United States

Marge Tooming, University of Oklahoma, United States

Architecture students are required to conduct precedent studies of similar architectural objects to create a unique design in studio classes. Through precedents, students learn about geometry, programming, site planning, and the use of materials and technology. Students are continuously reminded to use precedents throughout their studies to resolve current and anticipated design problems. By means of formal and informal education, students ideally develop a habit that will serve them for creating better buildings throughout their professional life. As instructional practices shifted through a global pandemic and site visits were cancelled, conducting a precedent study literally meant that professors and students would actively look at a computer screen, while sharing PowerPoint presentations, searching the Archdaily website, or watching YouTube videos. Precedent study, as architectural method, morphed. From this we address a professional education problem and raise our central questions: As architects are expected to design better buildings faster and cheaper, precedent studies may have a detrimental effect on design uniqueness, and particularly the developing aesthetic sensibilities and creativity of the learner, resulting in shortcuts that inadvertently encourage plagiarism. Is there an ethical framework or a design agenda that can be taught to aspiring and novice professionals to mitigate or even prevent plagiarism? What are the means to learn and practice efficiently but not to copy? The aim of this presentation is to develop both a conceptual argument for renewed methods education in architecture and to draw on empirical illustrations that can assist in using precedent studies ethically.

13:40-14:30 | Room 115

Saturday Onsite Parallel Session 2

Strategies for Promoting Cultural Sustainability

Session Chair: Hans Peter (Hepi) Wachter

64401 13:40-14:05

Design for Innovation With Tradition: Towards a 'New' Cycle of Linen-making

Cristiane Menezes, University of Aveiro, Portugal

Vasco Branco, University of Aveiro, Portugal

Nuno Dias, University of Aveiro, Portugal

Abhishek Chatterjee, University of Aveiro, Portugal

This article presents the fieldwork component of an ongoing doctoral research project in design that addresses the imminent disappearance of a specific context of traditional linen-based textile production, presently among the last surviving linen-making cultures in Portugal. The cycle "from seed to towel" is an ancient tradition kept alive in the parish of Castelões located in the foothills of the Caramulo mountain range, Central Portugal. The knowledge of the process, which covers more than twenty manual stages of linen-making from the linen seeding to fabrics production, has been passed down generations spanning centuries. Linen production once prevailed throughout the Portuguese territory, especially in the northern and central regions, however, in recent years, it has drastically declined due to various factors, leaving Castelões as one of the few remaining centres where the artisanal linen-making is still in practice and can still be observed. The research's main objective is to attach and promote to contemporaneity the value that this ancient process represents in terms of cultural, agricultural, and industrial heritage. The article, thereby, discusses findings and methodologies that are emerging from a convergence of "being-centered design" with ethnographic approaches in this context, which has brought together local linen artisans alongside design researchers and educators towards addressing the common goal of keeping the traditional culture alive, relevant, and economically sustainable. The paper also reflects on how this process is contributing towards articulating the doctoral research's central inquiry into the significance of what is 'new' and 'innovation' in the context of design and tradition.

64312 14:05-14:30

Study Abroad Programs as Means to Connect Culture, Art, and Design

Hans Peter (Hepi) Wachter, University of North Texas, United States

This presentation examines a study abroad program as a means to promote the intersection of culture, art and design and help students across art and design majors to connect the dots between the three. The program offers students to visit two cities in Germany in a faculty led program, giving them a cultural and historic overview of relevant sites, artifacts and design examples to bring to light the relations between a shared visual world, constructed by visual artist and designers, and the impact to the culture of a society. A study abroad program can be larger than a consideration of visiting works of art or design as discrete objects, and can seek to examine the networks of culture in which these artifacts and objects play a role. While traveling, students had been engaged in examine social histories and resulting cultural influences, significant to cultural monuments and artifacts. Furthermore, oral histories on site, narratives from natives, offer an interpretation of the Zeitgeist and the interconnection to the art and environmental design.

14:35-15:25 | Room 115

Saturday Onsite Parallel Session 3

Academic Practices Outside the Classroom

Session Chair: Nuno Dias

64362 14:35-15:00

Design for Dasein: A Pedagogical Framework – The Case of PROJECT@X

Nuno Dias, University of Aveiro, Portugal

Pedro Carvalho de Almeida, University of Aveiro, Portugal

Eduardo Noronha, University of Aveiro, Portugal

Ivo Fonseca, University of Aveiro, Portugal

Abhishek Chatterjee, University of Aveiro, Portugal

The article presents the case of PROJECT@X, a project-based learning initiative that immerses design pedagogy into a real-world context, within a phenomenological approach. The project co-defines strategic lines of action towards addressing various circumstances of need in the low population density areas of the Schist Villages in Central Portugal. PROJECT@X, established in 2019, emerges from an existing partnership between the University of Aveiro (UA) and the Schist Villages Tourism Development Agency (ADXTUR), and is now serving as a thematic basis for the 'Project in Design III' unit of the second year of UA's undergraduate design program. The project is divided into two main phases: in-loco fieldwork followed by project development in the classroom, accompanied by further field work investigation and survey; and finally, a summer school at the Schist Villages that entails an artistic residency and design workshops. The paper correspondingly reflects upon how the intervention is being informed by an articulation of 'affectivity, effectiveness and continuity' in conjunction with a "being-centered" approach to design. Within this framework, the article addresses the key question of how can design potentiate 'dasein optimum experiences' in the Schist Villages – both in terms of daily living and visiting. In conclusion, the authors discuss key findings, ongoing developments, and the future scope of the collaborative intervention, alongside its implications on the partnering institutions.

63515 15:00-15:25

Doctoral Side Effects: Damage Limitation Versus Unexpected Benefits to PhD Research in a Pandemic

Adriana Fernandes, Faculty of Fine Arts of University of Porto, Portugal

Aleksandra Kosztyła, Faculty of Fine Arts of University of Porto, Portugal

André Casteirão, Faculty of Fine Arts of University of Porto, Portugal

Diego Mergener, Faculty of Fine Arts of University of Porto, Portugal

Heitor Alvelos, Faculty of Fine Arts of University of Porto, Portugal

Hugo Palmares, Faculty of Fine Arts of University of Porto, Portugal

In May 2021, following up on a publication by PhD Design students of the University of Porto on the topic of the various kinds of impact of the current SARS-CoV-2 pandemic in doctoral research, the authors organised an informal online meeting for Arts and Humanities PhD students and recent graduates. The goal was to share insights, strategies, methodologies and other concerns that have been emerging empirically and intuitively in individual contexts. The present article therefore reports on these shared concerns, and subsequently analyses them. The session was held informally via Zoom, with an international presence; two virtual rooms were created for the purpose of accommodating linguistic diversity; conversation was spontaneous while moderated. Moderators provided a synthesis of discussed topics at a final joint segment of the session. Various students and graduates recognised the potential for the session to become a template for an extended support network; this is an additional motivation for the present article. Furthermore, the session provided a recurrence of experiences and adaptive measures, and the possibility of incorporating certain adaptations as permanent. Lastly, the present article ends with an inventory of identified adaptations, and their critical analysis as potentially permanent, positive changes in doctoral research procedures.

Keynote Presentation: Jon Wozencroft

The Attention Economy

Saturday, July 09 | 15:40-16:25 | Room 101 & Online

The attention economy was first theorised by political scientist Herbert A. Simon in 1971, sensing that the tendency towards information overload would create paralysis. "What information consumes is rather obvious: it consumes the attention of its recipients", he wrote. "Attention transactions" would replace financial transactions as the focus of our economic system, and especially in the worlds of politics, advertising and social media, so it came to be.

Intangible factors became paramount to the processes of promotion and distribution, namely immediacy, personalisation and free accessibility. "Attention economics" forms a potential consumer's attention as a resource – advertisers follow a model they called AIDA - Attention, Interest, Desire and Action. Attention is therefore the first stage in the process of converting non-believers and non-consumers. There is no time to digest, only to react, or not.

Progressively this directive takes over all aspects of communication, bringing us to the current conditions of widespread disinformation and its supposed remedy, the digital detox. If "ignorance is bliss", in its latest guise, ignorance becomes essential for maintaining a certain level of mental health.

Disinformation fosters conspiracy theories, anxiety, incredulity, with the dangerous outcome that nobody believes anything anymore, or could that be the opposite?... Extremism emerges as the only way of attracting attention.

How does this impact upon design education? The very strategies that are deemed necessary for teaching and learning might also be accelerating a mental health crisis that should have no place in contemporary pedagogy.



Jon Wozencroft

Jon Wozencroft started Touch in 1981/2. The intention was to extend the scope of a record label by combining music publishing with the level of curation afforded to fine art, producing a series of audiovisual productions, and the chance to collaborate with New Order, Wire, Joseph Beuys, Cabaret Voltaire, Chris Watson, Mika Vainio, and Fennesz amongst many others.

In the 80s and 90s, Wozencroft worked with Neville Brody on book and exhibition projects, leading to FUSE, one of the first magazines to critically engage with digital culture. In 2012, Taschen published a full documentation of the project, *From Invention to Antimatter*.

His photography and design work has appeared in publications including *Fax Art*, *Merz to Émigré and Beyond*, *Shapeshifters*, and *Cover Art By*. He was the publisher of *Vagabond* (magazine co-edited

with Jon Savage, 1992), and the editor/designer of Joy Division's *Heart and Soul* box set in 1997. In 2005–2007, he co–curated the re-releases of Joy Division's back catalogue and participated in Grant Gee's documentary film on the group's enduring impact.

Since 2007 he has been art director for Wire, whose 17th LP *Mind Hive* was released in 2020. A book of his work, *Touch & Fuse*, was published in 1999 by the University of Porto, and in 2017, *Touch Movements* documented his photography and curation of *Touch*. *Liquid Music*, a collaboration with Christian Fennesz is one example of moving image work that has been showcased at the BFI, Tate Britain, Sonar, Transmediale, Avanti, and numerous other festivals.

He taught at the Royal College of Art from 1994-2019, specialising in the impact of sound and moving image on design practice. His research with Paul Devereux investigates the power of sound in prehistory with the focus on Preseli, Wales, source of the Stonehenge bluestones: www.landscape-perception.org

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A woman with dark hair, wearing a light-colored kimono with a dark patterned obi, is seated and playing a board game on a low table. She is looking down at the game pieces. The background is dark and out of focus.

Sunday, July 10

Live-Stream Parallel Sessions

All times are in Western European Summer Time (UTC+1)

Abstracts appear as originally submitted by the author. Any spelling, grammatical, or typographical errors are those of the author.

10:00-10:50 | Room A

Sunday Live-Stream Presentation Session 1

Strategies for Promoting Creative Thinking

Session Chair: Mamata N. Rao

63334 10:00-10:25

Influence of 'Artefact', 'Activity' and 'Design Value' based Need Statements on Solution Outcomes

Mamata N. Rao, National Institute of Design, India

Deepak John Mathew, Indian Institute of Technology Hyderabad, India

A design brief is usually set by the client with various considerations such as the requirements, target audience, technology aspects etc. A designer who receives this design brief brings one's own interpretation of what needs to be designed - a product, service, process or as a combination. Need or Design task Statement a key component of a design brief could be articulated as textual statements in several ways for a brief. We see a potential to look into the formulation of a need or design task statement in a brief at various levels of abstraction and see its influence on the generation of design ideas or solution outcomes. We framed three types of need statements based on - 'thing or artefact', 'activity' and 'design or desired value' as part of design briefs that were given to participants who were asked to generate design ideas. Design briefs with varied need statements were given to students, in two formats - one group received the three statements in the sequence of artefact, activity and aspired value while the other received in the reverse order beginning with statement on aspired value first. The article would outline the findings of the research study to understand the role of varied Design task statements and their influence on an individual thought and visualization process. The work would be relevant and help designers to redefine the briefs for both academic and professional settings.

63644 10:25-10:50

Participatory Group Textile Practice as a Route to Support Mental Health and Social Interaction in Secondary School Pupils

Catherine Howard, University of Leeds, United Kingdom

The mental health of young people is now a significant cause for concern as the impacts of Covid-19 lockdowns, school closures and bereavements are assessed. Schools in the United Kingdom (UK) are charged by the government with identifying and supporting pupils who are struggling with their mental health and wellbeing, and with delivering a prescribed mental health curriculum for all pupils across the age ranges. For many, creativity plays a significant part in defining wellbeing but National Curriculum changes in the UK have diminished creative opportunities in schools and many children, particularly those from lower-income communities, do not have regular access to the arts, resulting in limited opportunity to enhance their wellbeing through creative activity. This paper explores the relationship between mental health and participatory group textile practice, outlining the methodology, implementation, and findings from a pilot study with secondary pupils in a Birmingham inner-city school. Working primarily with a core group of eight students aged between 11 and 15 with experience of poor mental health, the project progressed from idea generation to completing and sharing the final textile outcome. As a six-week group hand-stitch project, the study focused on the impact of the shared process on the pupils, the rationales behind their decision-making, and the positivity generated through their successful completion of the project. A participant-observer qualitative methodology was implemented in the research, with questionnaires also informing the project evaluation.

11:00-12:15 | Room A

Sunday Live-Stream Presentation Session 2

Learning Practices in Art & Design Education

Session Chair: Astrid Barrios

64210 11:00-11:25

Educator Attitudes and Parent Concern Throughout Online Courses

Fathi Shamma, The Arab Academic College for Education Israel Haifa, Israel

Background: Parents' accountability and engagement in students' education are stronger in distant educational contexts. Distance learning studies have shown that students may achieve academic improvements equivalent to those obtained via traditional classroom training. Online learning platforms are web-based tools that use the Internet to disseminate, monitor, and administer lectures.

Aim of the study: The purpose of the current study is to determine academics' overall attitudes toward online education as well as to address teacher-parent interaction in distance education.

Methods: A cross-sectional analytical research was conducted utilizing basic randomized sampling using an online survey questionnaire to get a representative sample of teachers and parents since data collection from all study participants proved challenging. SPSS23 was used to analyze the results collected.

Results: Our results showed a positive and statistically significant relationship between educators and parents in regards to distant education at the level of significance of 0.01, which indicates that the higher the level of educator attitudes and parent attitudes, the more positive the relationship between them.

Conclusions: Parents and instructors help students through the challenges of home schooling. These strategies may enhance the efficacy of online education for students whose household circumstances change. Therefore, the government should aid them by enhancing parent-teacher communication

63244 11:25-11:50

Baroque of the East and West: Sowing the Seeds for Intersections in Teaching and Learning of Art, Design and Music

Rebecca Kan, Nanyang Academy of Fine Arts, Singapore

Choong Kheng Tan, Nanyang Academy of Fine Arts, Singapore

Typically known as the Baroque of the East, Peranakan art is known for heavy ornamentation and vibrant colours depicted through everyday objects in Southeast Asia. Inspired by the Peranakan, we developed an integrated curriculum to highlight art, design and music outcomes. The process involves students negotiating their understanding of design and music through creative inquiry, synesthesia, and graphic translation. Through various forms of technologies to support the inquiry process, students generated visual interpretations of the sonatas of Domenico Scarlatti, an Italian composer who was in the service of the Portuguese and Spanish royal families. The ambition of this project was to turn the reading of Southeast Asian elements into performance outcomes, using creative inquiry to unlock contemporary possibilities. The creative outcomes of this integrated curriculum are examined vis-à-vis artefact analyses of the kinds of reinterpretations of Baroque created and surveys of student perceptions. With this process, students developed critical sensibilities about lines, shapes and forms in music and design, and generated creative products that raised both technical and aesthetic competences. This paper augments the recent publication of our book chapter (Tan & Kan, 2021), in which we observe that creative inquiry is situational and contextualised. The student-articulated outcomes point to the urgent need today of re-designing curriculum that supports creative thinking and critical inquiry. Hence, as higher education institutions gradually return to in-person learning, we open the discussion on how indigenous Southeast Asian elements can empower a post-pandemic future in the teaching and learning of the arts for higher education.

63363 11:50-12:15

Didáctica Cocreativa In Situ

Astrid Barrios, Corporación Universitaria Taller 5, Colombia

Javier Ramírez, Corporación Universitaria Taller 5, Colombia

Deyanira Jiménez-Barrios, Universidad del Norte, Colombia

In Situ Co-Creative Didactics, configures a flow of representations from intrinsic and extrinsic motivations, in the creative act of the subject from uncertainty, intersubjectivities, ideation in creative praxis, dimensional interaction and gnosis, in an approach that reveals interconnected nodes of the subject in his social imaginary, committed in his learning process with his social work. Co-Creative Didactics In Situ, is an emerging Praxeological action within traditional didactics, which has in its DNA, constitutive elements of distinctiveness, legibility and euphony in the transformative social action of the learning process. It is a Didactic that allows to define the etymological, ontological, axiological, teleological, epistemological and methodological foundations that interweaves the learning process teaching of the subject, with a dialogical, ecosystemic and interactive approach, whose purpose is to generate universal knowledge from the formation of the subject, through joint social interconnections in learning based on transdisciplinarity as the central nucleus of creation research, that transforms and socially transfers knowledge. It is a research approach based on the criteria of scientific rigor, coherence and contribution in the field of action of creation research, facing the processes and dynamics of learning in emotional and cognitive sensitivity.

12:25-14:05 | Room A

Sunday Live-Stream Presentation Session 3

Culture & Heritage

Session Chair: Gota Hayashi

62743 12:25-12:50

Best Practices for Teaching a Course on Culture for EFL Undergraduate Students in Japan and Abroad: Based on Literature Review

Gota Hayashi, Tokyo Keizai University, Japan

This literature review examined academic papers written in Japanese and English on how courses on culture for EFL (i.e. English as a foreign language) undergraduate students in Japan and abroad were taught, and suggestions for teaching that scholars and educators have for educators and administrators. The databases used were CiNii, ERIC, and ProQuest with full text search for all databases. The researcher identified 38 relevant articles for integration in the paper, after reading through and annotating 54 papers that were not overlapping. The researcher found that academic papers available on culture instruction at the undergraduate level for EFL in Japan focused on sources outside of the classroom such as short-term study abroad programs, long-term study abroad programs, video-conferencing and interaction with students from other countries who are also learning EFL, and social network services to educate students about culture. On the other hand, culture instruction at the undergraduate level for EFL abroad focused on activities in the classroom, particularly, having students learn about culture through movies, comics, and works of literature. Implications for administrators and educators involved with or are about to be involved with designing or teaching undergraduate courses on culture in Japan or abroad particularly in EFL contexts will be discussed based on literature review.

63983 12:50-13:15

Usability SMARTV3 Learning Management System Towards Art & Design Courses

Lilian Lee, Universiti Malaysia Sabah, Malaysia

Jasni Dolah, Universiti Sains Malaysia, Malaysia

The COVID-19 pandemic poses difficulties for lecturers and students during the teaching and learning process. The SmartV3UMS Learning Management System helped organise and display learning information, manage instructional components, and ease communication between lecturers and students. An important thing to do is to look at Learning Management Systems (LMS) that institutions use to manage learning interventions and educational resources for students, especially in art and design courses at the Academy of Arts and Creative Technology, Sabah, Malaysia. Thus, determining art students' acceptance of design and quality is crucial to the Learning Management System's (LMS) effectiveness, especially for art and design courses. Student acceptance of smartV3UMS service quality was analyzed in terms of Self-Efficacy, Learnability Expectancy, Interface Design Expectancy, Performance Expectancy, Facilitating Supports, Instructor and Peer Supports, Organization and Navigation Quality, and Interaction Quality. The results of inferential statistical analysis showed that Performance Expectancy, Interface Design Expectancy, and Interaction Quality influence visual arts students' adoption of LMS. The results are supposed to aid stakeholders in constructing, improving, and sustaining the system. Understanding students' perspectives and developing appropriate SmartV3UMS usage strategies are hoped to increase the use of this system and meet the needs of visual arts students, further encouraging online learning as an effective medium for successfully delivering art and design courses.

63696 13:15-13:40

The Design Studio as a Place of Study: Critique as Hermeneutic Conversation

Naoko Masuda, Alberta University of the Arts, Canada

As postsecondary design educators, are we providing students a place of study or are we just instructing? Educational theorist and historian Robert McClintock's "Toward a place of study in a world of instruction" (1971) was published as a critique of the instructional culture in education in which he observed an overemphasis on pedagogy and the role of the teacher in student learning. In McClintock's conception of study the student is not a passive being reliant on a teacher to provide learning opportunities, but rather an active agent in their own self-cultivation. With the ongoing academization of design education and the outsized impact of communication design on society, there is an urgent need to consider how our own understandings of communication design, its history, and design education impact the future of our discipline and larger society. As part of a Master's thesis conducted using a hermeneutic approach and interpretive analysis to gain a deeper understanding of the lived experience of design educators, two communication design educators in a Canadian university were interviewed. Amongst the revelations was the value and significance of conversation, including within the design critique, as a necessary foundation for a student-teacher relationship that supports learning for both parties. This presentation explores Gadamer's concept of the hermeneutic conversation (1960/2013) as one approach that may help teachers and students transform the design studio into something closer to McClintock's "place of study" and open possibilities of self-formation for students and educators.

63351 13:40-14:05

Myriorama: Obsolete Technologies for a Contemporary Scenographic Practice and Thought

Aurora dos Campos, University of Porto, Portugal

Helder Gomes, University of Porto, Portugal

Sofia Ponte, Universidade Europeia, Portugal

This article reflects on some of the conceptual, spatial, and narrative possibilities of the use of the Myriorama game, and its pre-cinematic technology, in contemporary artistic and scenographic practices. For this, it considers the language of "scenography in the expanded field" within some territories of experimentation that are beyond the sphere of the traditional theater event. The article calls upon concepts like "expanded scenography" and "performative scenography", discussed by Erika Fischer-Lichte and Arnold Aronson, and currently problematized by a few artists and scenographers. More specifically, this analysis will consider the visual essay Myriorama n°1 (2021) by scenographer Aurora dos Campos and a historical contextualization of the game Myriorama. This obsolete technology was created by Jean-Pierre Brès (1760 - 1834), in 1824, in France. At the time the game was meant to inspire artists, create stories for children and entertain a certain European elite. It became popular during the 19th century, with different versions in England, Italy, Austria, Germany, and Greece, for instance, but fell, as it began, quickly into oblivion. It is a game of portable dimensions, generally composed of a set of 12 to 32 illustrated cards, hand-colored, with human and other animal figures, buildings, country landscapes, mythological scenes, recreational and everyday scenes, which when combined and recombined create various visual narratives. Through this methodological strategy we propose an analysis to current artistic and scenographic practices that feed the visual essay genre, while contributing to reflect on the use of obsolete technologies in contemporary art.

14:15-15:30 | Room A

Sunday Live-Stream Presentation Session 4

Learning Practices in Art & Design Education

Session Chair: Silvina Felix

64258 14:15-14:40

The Development of an Internet-based Environmental Prenatal Health Program Using Art

Hyun Kyoung Kim, Kongju National University, South Korea

Purpose: The purpose of this study was to develop that an internet-based environmental prenatal education program using art graphics had an effect on pregnant women's environmental health perceptions and behaviors. Methods: This study used a methodological framework that followed the five stages of the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model. The storyboard was created with text and pictures by the researcher. The visual content of each of the four themes included sections on 1) chemical hazards and micro-dust, 2) environmental toxin and fetal health, 3) EDCs and electromagnetic waves, and 4) environmental hazards in the postpartum period. The content validity index (CVI) was checked for appropriateness, feasibility, importance, and adaptability. Results: A public health center nurse, an obstetric clinic nurse, and a maternal nursing professor verified the content validity. The CVI was rated using a Likert scale that ranged from 1 point, indicating "very inappropriate," to 5 points, indicating "very appropriate." The overall CVI was .90 or higher, which was higher than the criterion of .78. The final content was selected and spread across 8 sessions over 4 weeks via lectures, discussions, and questions and answers. Conclusion: Education using art is a creative strategy that can interest learners in understanding concepts. Future studies are needed to verify the effectiveness of interventions and diversify the types of educational interventions, including online media using art for pregnant women.

64366 14:40-15:05

Tell Me Your Story: Digital Storytelling as a Teaching and Communication Tool

Silvina Felix, University of Aveiro, Portugal

Violeta Clemente, University of Aveiro, Portugal

The paper describes an exploratory study focused on the use of Digital Storytelling (DS) as a tool for design students to communicate their self-reflection process and reveal their soft skills to potential employers. Product design students worked on their narrative for four weeks in practical classes during a course concerned with visual communication techniques under the supervision of a communication design professor and a researcher from the Education field. Digital Storytelling is widely recognised in the literature, as an innovative learning strategy supported by practical cases with implementation in classrooms. Based on the premise that DS can be used as a vehicle to help students to "think about your own identity", the creative process of finding students' own personal narrative led them to reflect about themselves and about their life experiences. Students used digital technologies and computer software as Movie Maker or Adobe Photoshop to create individual short films and communicate autobiographical narratives with original images and audio where the narrator is the story's protagonist. As an outcome, students narratives focused on remarkable personal life experiences or academic involvements, some of them showing a significant emotional charge, others trying to highlight singular characteristics which may be appreciated and valued by a future employer.

63133 15:05-15:30

Using Comics for Teaching Math to ESL Students

Vladimir Gutiérrez, Universidad César Vallejo- Piura, Peru

This research aimed to demonstrate that comics can help in teaching geometry to mining students in Universidad Nacional de Piura, a public university in Peru. For that purpose, 37 students belonging 4th semester of the mining engineering Faculty, participated for 10 weeks, solving math problems, specifically geometry problems, using a strip comic, called Incas' math, in which the students had to solve several enigmas, for helping to build Machu Picchu citadel. For this purpose, the students were evaluated through a pre-test, which consisted of mathematical problems of geometry. Afterward, they took 10 classes about the branch of mathematics aforementioned, in those, was developed the main shapes of the rocks and their areas problems. Finally, the students were assessed with the post-test, whereby, were resolved mathematical problems, described in imaginary stories. On another side, motivation was measured through the ATMB survey, along with a semi-structured interview conducted after the post-test. The main outputs obtained were the strong improvement in geometry and the high motivation in these students.

10:00-10:50 | Room B

Sunday Live-Stream Presentation Session 1

Academic Practices Outside the Classroom

Session Chair: Olinda Martins

64417 10:00-10:25

Artistic Spaces as a Web Connected With the Community: Coo195 and Entre as Case Studies

Rosinda Casais, Faculty of Fine Arts of the University of Porto, Portugal

Filipa Cruz, Faculty of Fine Arts of the University of Porto, Portugal

The article seeks to critically understand processes of creation and sharing outside of the classroom, in two different spaces based in Porto – Coo195 and Entre. Coo195 is configured as a collective studio, a workspace similar to the classroom, but without the exclusive supervision of professors and specialized technicians. Entre consists of an exhibition window, which relates what is produced in the academic environment with the Academy's outside context. This allows the contact, different dynamics and the confrontation of this exhibition project and artworks' display with the local community. From the relational practices and contamination operated in these spaces, we question the ability to promote artistic work and the relevance of establishing other spaces outside the Academy. These proposals promote the transitoriness of artists and offer visibility to the artistic work developed in these scopes. The objective of this type of space is to bring the community closer to artistic practice/thought and to favor the artistic continuity promoted by the Academy.

64369 10:25-10:50

Typography Education as a Tool to Potentiate Art Nouveau Museums

Olinda Martins, University of Aveiro, Portugal

Francisco Providência, University of Aveiro, Portugal

This article results from a masterclass given to technicians from the European Réseau Art Nouveau Network. Its main objectives were to raise awareness of the potential of Art Nouveau museum collections in contemporary typographic development and the implementation of museographic practices involving different audiences for this thematic. Starting from a brief historical context, supported by the observation of several specimens (two-dimensional and three-dimensional) from the 1880s to the 1920s, it was intended to foster interest and critical discussion on the formal differences between the design of the letters (micro-typography) and its use in different contexts (macro-typography). By presenting some Art Nouveau typographic case studies (original fonts, revivalist types, or new creations inspired by Art Nouveau), the theme of design and creation of typographic fonts was approached, anticipating possibilities for future development in this area of activity. From this masterclass emerged a set of potential actions that not only promote the specific area of Typography (such as the creation of fonts from the graphic collection of these museums) but also integrate it as a museological practice, namely through actions of investigation of the local Art Nouveau typographic heritage and its use in the design of specific activities of museums and their respective educational services.

11:00-12:15 | Room B

Sunday Live-Stream Presentation Session 2

Interdisciplinary Arts & Design for Society

Session Chair: Carla Cadete

64371 11:00-11:25

Designing an Adrenaline Auto-Injector: The Perception of Shape as an Affordance of Use

Clara Serrano, University of Aveiro, Portugal

Eduardo Noronha, University of Aveiro, Portugal

Ivo Fonseca, University of Aveiro, Portugal

Fábio Fernandes, University of Aveiro, Portugal

Adrenaline auto-injectors are considered an effective and immediate emergency treatment for severe allergic reactions that may result in potentially fatal anaphylactic shock if not treated on time. These auto-injectors are designed to be self-administered intramuscularly by the patient or the carer, who are generally instructed on how to apply them, however, studies indicate that these are often used incorrectly, causing accidental injuries and failed administration of the dose. A significant number of such failed deliveries can be attributed to the shape of the injecting device which according to conducted surveys is un-intuitive, especially in situations of stress and emergency, and when the person administering has no previous knowledge or experience of using the device. In conjunction, this paper argues that the shape of the auto-injector is crucial towards communicating how to use the device correctly and describes a research project that aims to develop an intuitive, accessible, and user-friendly auto-injector that can be used without previous training, and wherein the shape can promote natural associations towards ensuring correct usage. The paper also discusses key design considerations, such as common usage errors, and the patients' perceptions of, and relation with, auto-injectors. It emphasises how by focusing on use-case affordances, the device can foment a functional rather than arbitrary relation with the user, restricting the way the device can be used and, thus, allowing it to be properly administered in emergency situations.

63078 11:25-11:50

The Role of Design: A Humanitarian Approach and an Opportunity to Prepare Students for the Real Working World

Carla Cadete, Lusófona University of Porto, Portugal

This study aims to contextualize and describe a pedagogical practice developed in the Academic curriculum at Lusófona University of Porto (ULP), with students from the 2nd year of Communication Design bachelor. A pencil for a school is a solidarity campaign with the purpose of helping to build a school in the village of Matsinho, in the province of Manica, Mozambique. This is a project carried out by The Big Hand, a non-governmental organization (NGO) that promotes the well-being of children living under unfavorable environmental conditions, ensuring their access to education, healthcare and nutrition. The campaign's briefing includes a pencil, a set of posters, a roll-up, a T-shirt, and a label for a can to collect donations. To complement the project developed in Design classes, a free one-day workshop was held, in which students had the opportunity to talk with the President of the NGO, ask questions and share ideas. This article emphasizes the responsibility of educators in preparing young students and future designers to be able to face contemporary challenges, using their skills as an alternative method of intervention in social issues and also to realize the role of design in promoting positive change. It also offers a solid opportunity to prepare graduates for the real working world and promoting engagement through innovative practice. Also proved to inspiring the new generation of designers to have an empathetic mentality and do not work only for commercial purposes but also for social needs.

62469 11:50-12:15

Art as an Ideology Can Facilitate People's Understanding of Climate Change and Help People Explore a Speculative Future

Wenwen Liu, Teesside University, United Kingdom

Robert Burton, Teesside University, United Kingdom

Simon McKeown, Teesside University, United Kingdom

Climate change is impacting on all aspects of contemporary life. Many artists provide a compelling vision for speculative futures awakening a creative consciousness using imagined worldviews. This paper presents my practice-based research that aims to establish how visual art can engage with issues-based concepts and ideologies through presentation, re-presentation, and interpretation as a framework for engaging with issues of climate change and realigning society to sustainable futures. This paper takes theory and artistic practice as methods means to respond to themes and issues of climate change. In the context of practical research, the arts-based approach and art theory research alternate between planning, theoretical research, practical action, reflection, and evaluation. Through digital art, this study creates a discursive space that relates to daily life, where people can deeply understand the interconnecting relationships between humans and the planet; simultaneously, it also shows people an achievable ecological future and encourages people to think and find an existence conducive to all. This existence is not the present, but a possibility for human beings to explore the future through the reshaping and reimagining of the present.

12:25-14:05 | Room B

Sunday Live-Stream Presentation Session 3

Interdisciplinary Arts & Design

Session Chair: Seda Ozen Tanyildizi

64394 12:25-12:50

The Relationship Between Concept and Medium in Site-specific Art

Seda Ozen Tanyildizi, Izmir University of Economics, Turkey

As site-specific art emerged as a form of criticism of galleries and museums in 1960s, political concepts became the starting point for its evaluation and interpretation. (O'Doherty, 1999: 87-108) In this period, both critical artworks practiced in institutional gallery or museum spaces and the installations produced in public spaces have ensured the questioning of the relationship between art and its location from many aspects. In order to convey such a criticism, artists used site as a tool within the concepts focused on institutional criticism. Thereby, art, which was considered as objects within a "white cube" until that point, has been rescued from the museum context and regarded separately from institutional buildings. Together with free-market policies which emerged in the period of the Reagan and Thatcher governments in the 1980s, companies in the United States and Britain began to dominate high culture; art started to serve as private capital within the issue of 'art in architecture', and site-specific art began to be discussed through new concepts. (Wu, 2002: 1-6) New suggestions and strategies introduced by artists regarding site were followed by commercial galleries, which has led to the re-institutionalization of this process by art galleries and some organizations belonging to the state (arts funding, competitions, etc.). (Greenberg, 2005: 246- 259) This study examines the relationship between concept and medium in site-specific art considering the process of re-institutionalization.

64383 12:50-13:15

Homeostatic Designs: How the Theories of Antonio Damasio Can Inform Design Thinking

Andrea Macruz, Tongji University, China & Dubai Institute of Design and Innovation, United Arab Emirates

Theories studied in design related to art and design are scientifically proven through rigorous methodology, along with contemporary neuroscience. This paper discusses the role of homeostasis through the lens of the neuroscientist Antonio Damasio and its potential relation to design. For him, homeostasis is a self-regulating process by which an organism can maintain internal stability while adjusting to changing internal and external conditions. The understanding of physiological regulation has evolved from the Hippocrates through Claude Bernard, to Walter. However, these views of homeostasis are non-conscious forms of physiological control. The main contribution of Damasio is the addition of homeostatic feelings that can be conscious. How we feel can start to serve as homeostatic guides. This essay proposes that design can be an example of such regulating mechanism. It raises questions such as: to what extent design can act as psychic stabilizers? How homeostasis expands the views on preferences and rational choices, and how designers can use feedback to create projects with greater intelligence and performance. The relevance of the body's homeostasis and feelings is becoming evident in neuroscience yet difficult to incorporate into the design fields. This paper offers an opportunity as a research inquiry. Discussing homeostasis and laying a methodology to apply in design provides insight into how this can contribute to the built environment.

64413 13:15-13:40

A Biometric Method for Spatial Experience Analysis: A Case Study of Airport Design and Traveler Stress

Humbi Song, REAL Lab, Harvard Graduate School of Design, United States

Isa He, REAL Lab, Harvard Graduate School of Design, United States

Zach Seibold, REAL Lab, Harvard Graduate School of Design, United States

Allen Sayegh, REAL Lab, Harvard Graduate School of Design, United States

Why do certain built environments and events induce stress? How does the design of our spatial environment affect our mental state? What can we do to measure and understand these interactions? Interdisciplinary collaborations between architecture and psychology have given rise to a new frontier of architectural research, and emerging biometric sensor technologies lead to innovative research methods that can provide a unique insight into human spatial experiences. This research uses the passenger experience of air travel as a case study for prototyping methods of quantifying and understanding individual spatial experience. The airport presents a potent case study environment; though significant energy has gone into engineering the passenger experience, the prevailing cultural perception of air travel remains tinged with unease and anxiety. The presented research outlines a methodology for quantitatively measuring the passenger experience of the airport design: equipping passengers with biometric electrodermal activity (EDA) sensors – a biomarker significantly correlated to emotional stress response, analyzing first-person video footage worn by participants to map contextual information, and conducting interviews to assess the participant's perception of the air travel experience. A dashboard was then developed to facilitate visual cross-referencing and analysis of aspects of airport design and social stressors at airports with the biometric data of the passengers and their self-reported perceptions. The overall aim of this research is to identify key elements to help rethink and redesign airport architecture and experience. Future research can utilize this methodology to facilitate speculations on alternative scenarios for designing not only airport architecture but also other analogous public spaces.

63353 13:40-14:05

The Competitive Transformation of Business Based on Agile Innovation Methods That Engage Visual Creatives as Business Process Leaders

Viviana Alejandra Álvarez, Corporación Universitaria Taller 5, Colombia

Carlos Varela, Corporación Universitaria Taller 5, Colombia

Business Design as an emerging concept creates and captures value for organizations, transforming their value proposition as a real factor for the business. The role of the designer or visual creative in this ecosystem is made, among others, with these methodologies and concepts, establishing norms that allow the systemic and organized evolution of their creative work and lead it to a collaborative atmosphere of creation. With the digital revolution, which entails challenges never before faced by organizations and their collaborators, the role of thinking in terms of design takes on vital importance, since the adaptability and survival of organizations and their collective depend on this. In this research we will expose the way in which visual creatives add value from their knowledge as well as the way in which, inspired by them and complemented by agile methodological tools, they have collaborated to impact their core. This research demonstrated that visual creatives can be management leaders, as long as they adopt and implement methods and tools such as those provided by liquid models and agile methodologies. Likewise, it is noted that this project proved to be totally relevant for national companies, since they lack managers of these methodologies.



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Learning Practices in Art & Design Education

63356

Profiling the Instructional Designer: Towards a Systematisation of the Profession

António Gorgel, IADE–Universidade Europeia, Portugal

Carlos Rosa, IADE-Universidade Europeia, Portugal

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In recent years, particularly after the COVID-19 pandemic, the need to rethink learning experiences has become evident. Instructional design is a field that can contribute significantly to developing new ways of learning in digital environments; however, as a profession within the European context, it has not been regulated, nor the requirements for the practitioners of this field have been thoroughly systematized. This paper looks at instructional design and outlines the profile that a European Instructional Designer expert (EIDe) should meet. We contend that this person should be responsible for designing, developing, and delivering learning products and experiences and coordinating the Instructional Systems Design process. The learning products may include online courses, instructional manuals, video tutorials, learning simulations, among other digital learning experiences. We argue that Instructional Designers are poised to become key professionals in the educational domain and that, given their potential skills, they are in a critical position to contribute to the success of the 2021-2027 Digital Education Action Plan and the European Union's policy and strategy on digital and green transitions at large. The research is being developed in partnership with six European organizations (ISQE, IADE, EFCoERT, EDEN), focusing on developing competencies and a professional profile for the EIDe in line with the European Qualifications Framework Level 6. Namely, on articulating existing instructional design approaches with design methods. Ultimately, we intend to develop and empirically validate the profile and learning outputs for the EIDe, aiming to create a European level accredited training program.

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Academic Practices Outside the Classroom

63343

Mechanical 2021: Educational Game Concept to Promote Sustainable Thinking and Cooperation in Brazilian Basic Education

Diego Mergener, University of Porto, Portugal

Emerson Ranieri Santos Kuhn, Sagrada Familia Elementary School, Brazil

This work aims to present the results of preliminary tests of the concept of a cooperative board game whose purpose is to make people aware of the importance of their social/environmental responsibility related to the treatment and collection of plastic and electronic waste. The game focuses on cooperation and mutual help, as it uses friendly social interaction to complete the proposed objectives. Based on aspects of the tabletop RPG, players must act as a team, evolve their characters and develop strategies together to overcome challenges. Two tests were carried out involving eight students aged between twelve and thirteen years old attending the 7th grade of Brazilian middle school. The intention was to see if the mechanics and rules idealized were working as planned. As a result, some mechanics and rules were identified that were not working correctly during the game. Another result obtained was the need to prepare an illustrative manual to facilitate the understanding of the rules. According to the tests, we concluded that the game not only addresses issues that work on synergy and teamwork, but also involves logical-mathematical reasoning, argumentation and creativity. It was also found that sustainability should be better addressed in the game so that it has a greater reflective weight on the players. As future work, we intend to adjust the game deficiencies, identified as rules and player actions in order to test again and see if the improvements resulted in better gameplay.

64758

The Effectiveness of Academic Literacy Courses in Postsecondary Institutions in Ontario: The Development of an Evaluation Tool

Mira Kapetanovic, Toronto Metropolitan University, Canada

Academic literacy classes in postsecondary institutions are vital in advancing students' literacy skills and, thus, enabling students' capacity to endure and prevail in advanced education. However, lower literacy levels have been an issue for many students that enter or attend postsecondary studies. Institutions have noted that some students fail to meet the demands of postsecondary education as they lack basic knowledge and literacy skills. In postsecondary academic programs, students are expected to possess skills prior to beginning their studies, and students are also expected to develop specific skills while completing their academic programs. Many underprepared students may not meet the academic literacy demands of postsecondary studies. To address this, academic institutions have mandated that students attend and complete specific academic literacy courses to support student needs and provide students with the necessary literacy tools to cope with the academic capacity requirements of university and college programs. In response to this, academic literacy courses were created to assist students in developing the literacy skills needed to participate in university and college programs successfully. The study being presented investigated a sizeable postsecondary institution in Ontario, Canada and examined the structure of a fourteen-week academic literacy course held during the first semester. The study focused on these courses, identifying gaps and developing a method of evaluating course effectiveness. Moreover, recommendations are made to improve courses to ensure students develop the necessary skills to complete their academic studies. Part of this study applies and repurposes the Measuring the Academic Skills of University Students.

Art and Design Education for Cultural Sustainability

63649

Cultural Sustainability: Diversified Education and Innovative Design Application of Yao Ethnic Festival Costume Cultural Inheritance

Qinmi Yu, Silpakorn University, Thailand

The purpose of this study is to explore a diversified and sustainable educational model for the cultural inheritance of Yao festival costumes in economically underdeveloped areas. Methods: Collecting data and investigating the status quo through field surveys, expert interviews and other methods, sorting out the difficult factors in the inheritance process, and analyzing the advantages and disadvantages of teaching modes such as apprenticeship, school education, and digital education in the inheritance process of Yao costume culture; to build a diversified and three-dimensional cultural heritage inheritance and innovative design education system; Significance: Promote the modern transformation of Yao festival cultural elements through design education, realize the sustainable continuation of traditional cultural spirit, and protect cultural diversity.

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Art and Design Education for Sustainable Development

64084

Achievement of Program Outcomes in Between Dance Students of Creative Art Program During a Pandemic and Endemic of COVID -19

Victor Pangayan, Universiti Malaysia Sabah, Malaysia

Since 2020, the SARS-CoV-2 virus, which causes Coronavirus disease and is also known as Covid-19, has triggered a pandemic (World Health Organization, 2021). This phenomenon affects the education sector, including the tertiary education system (Pangayan, 2021). These effects and changes also occur in the learning of the Fundamental of Dance Arts course (CA10302) offered in the Creative Arts Program at Universiti Malaysia Sabah. The purpose of this study was to compare the learning achievement of creative arts students enrolled in the Fundamental of Dance Arts Course who were taught using two main instructional strategies, namely online and blended methods. To accomplish the study's objectives, an analysis of outcomes-based education (OBE) will be conducted and survey questions will be distributed to supplement the data. The findings indicate that there are disparities in the attainment of learning outcomes that are influenced by various teaching systems. Additionally, this study indicates the students' proclivity for 'learning methods on the course that focus on students' practical skills.

63337

Digital Transformation in Art Education for Pre-service and In-service Primary School Teachers: Potential and Challenges

Victoria Pavlou, Frederick University, Cyprus

The sudden disruption of normal classes caused by COVID-19 and the transition to Emergency Remote Teaching in Higher Education brought into focus the challenges as well as the opportunities afforded through remote learning-teaching to offer high quality educational experiences (Azorin 2020, Harris 2020, Hodges et al 2020, Rapanta et al 2020, UNESCO, 2020). The new situation opened the door for imagining new possibilities and developing meaningful online experiences for learners even in art education that is traditionally considered too experimental and hands on to be offered online. It also highlighted the need for digital transformation in Higher Education Institutions and for opening the access to quality art education to make sure that it is applied, especially during difficult times when it is mostly in need (building resilience through the art). The presentation focuses on lessons learnt for distance-learning teacher trainings through the CARE (Visual arts education in new times: Connecting Art with REal life issues) European funded project that run during the COVID-19 pandemic and how these led to a successful application of a new project, the CARE/SS (Critical ARTs Education for Sustainable Societies). CARE/SS aspires to respond to the growing demands of supporting the development of key competences in arts education to ensure quality in teaching. It will offer useful guidance into the ways European education systems across Europe can improve to provide educators and young Europeans through online and blended learning with the skills required in order for our future societies to coexist in peace and respect.

Arts and New Media

64224

Screen View of the World – The Study of the Dissemination of Media Façade Image Information in Space

Haoyi Ruan, University of Wales Trinity Saint David, United Kingdom

People's attachment to the screen has reached an almost obsessive level. Through specific technical means, some people can't even tell the world inside and outside the screen. In the composition of modern environmental design, photoelectric media such as screen occupy a more and more important position. Do people really like the screen or the content displayed on the screen? At the same time, worse image information is slowly eroding the urban landscape, affecting the quiet urban night scene, and changing the image and landscape of the city. What is the experience and essence of people feeling the screen in the architectural environment? In order to answer the above series of questions about this phenomenon and related problems caused by the screen, this paper will explore the definition and attributes of the media screen, and collect and restore this phenomenon with phenomenological research methods through the understanding of space and image as the media. People living in Asia, especially in China, have more experience of large-scale screens in cities night scene. This study selected 10 university teachers with living experience in various parts of China and conducted phenomenological interviews with them, and this paper following the research steps of suspension, reduction, link and synthesis. Through the research methods of interview, questionnaire and joint design, find the correlation between each layer of research and make it become a rigorous structure. Finally, find out the essence of this phenomenon with the help of McLuhan's media theory.

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Cultural Diversity in Arts Education

63238

Intercultural Attitudes, Preferences for World Music and Artworks From Different Cultures in the Context of Contemporary Music Pedagogy and Art Pedagogy

Snjezana Dobrota, Faculty of Humanities and Social Sciences University of Split, Croatia

This research examines the influence of age / year of study on intercultural attitudes of students, their preferences for world music and artworks from different cultures, along with the relationship between intercultural attitudes, preferences for world music and artworks from different cultures as well as the impact of visits to the theater / classical music concerts and art exhibitions on the preferences for world music and artworks from different cultures. The research was conducted on a sample of students attending the Faculty of Humanities and Social Sciences at the University of Split. The questionnaire used in the research was composed of the following four parts: The General Data Questionnaire, The Munroe Multicultural Attitude Scale Questionnaire (Munroe & Pearson, 2006), The Musical Preferences Questionnaire and The Visual Art Preferences Questionnaire. The results confirm that senior university students compared to students at the lower study level have developed certain aspects of intercultural attitudes and show greater preferences for world music and artworks from different cultures. The influence of going to the theater / concerts of art music and art exhibitions on the formation of preferences for world music and artworks from different cultures has also been confirmed. Finally, the results of the research confirmed the connection between intercultural attitudes and preferences for world music and artworks from different cultures. The paper presents the implications of the obtained results for the concept of music pedagogy and art pedagogy theory and practice aimed at shaping the intercultural attitudes of pupils and students.

Culture and Heritage

63727

Symbolism of Selected Wax Prints in West Africa

Naa Omai Sawyerr, Takoradi Technical University, Ghana

Richard Acquaye, Takoradi Technical University, Ghana

Cynthia Agyeiwaa Kusi, Takoradi Technical University, Ghana

Wax prints have been a part of the material culture and visual anthropology of West Africa for centuries. Even though they may appear the same in outlook and material constituent, their interpretation and disposition in the scheme of things differs from country to country across the sub-region and beyond. This study, therefore, seeks to identify, assess and discuss the differences in the symbolism and application of selected traditional wax print designs of four West African countries namely Ghana, Nigeria, Cote de Ivoire and Burkina Faso. The qualitative research design was used to sample ten (10) traditional wax print designs for the study. Interviews, observation and documentation were used to collect data while thematic analysis was used to analyze the data. The findings indicated that there were some similarities as well as differences in the designs that were assessed in the study. Also, the etymology of the prints are appended with interesting stories that resonate with respective culture of application within the study area. It is recommended that information about traditional wax prints are well documented and catalogued so that they remain relevant, timeless and serve as visual metaphors to the future generation.

63874

The Study of the Visual Effects of Depth Creations and Perspectives in New Egyptian Archeological Discoveries

Heba Abdelaal El Kamshoushy, Alexandria University, Egypt

Many researchers have worked on the analytical study of the ancient Egyptian art executed in two dimensions as paintings or reliefs depending on the famous squared grid, which was the main guide for the artist to maintain standard proportions in drawing. But in this research I have attempted to base my own analysis and theories that may be put forward to study how the ancient Egyptian artist creates techniques to influence a sense of perspective using the decrease in size and the shortening of elements placed at angles to the visual plane. There have been several recognizable elements used by the artist to give depth to their compositions. Although he accepted the drawing surface as flat and created the visuals through a series of symbols arranged over the flat surface, but the detailed analytical study of some objects revealed his attempts to copy the objects as they are seen in nature showing a beginning of a perspective study and depth. The importance of the study lies in it's application on the recent Egyptian archeological discoveries announced by the Egypt's Ministry of Tourism and Antiquities - aiming to understand more about the ancient Egyptian arts and exploration of the Egyptian civilization - based on the work of the Egyptian archaeological missions in various sites in Saqqara. Which comes within the framework of the state's support to conduct archaeological excavations and preserve the ancient Egyptian civilization.

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Design for Society

63272

Designers in a Diverse Society of Change: Cultivation and Responsibilities

Simon Dai, University of Canterbury, New Zealand

Heide Lukosch, University of Canterbury, New Zealand

Bahareh Shahri, University of Canterbury, New Zealand

In light of social change diversification, the importance of shaping connections between people and products for more resilient ways of life is growing. The purpose of this paper is to uncover the importance of responsibility and self-cultivation of designers in social change diversification and to examine the potential unintended consequences of designs meant to serve the greater good. For this aim, this paper reflects on a case study of Chinese dockless bike-sharing design systems, including Mobike and OFO. The case of the dockless bike-sharing design system represents fast-paced changes in the service design industry, which necessitates quick, constant, and holistic design input. The paper reports on how the case study is described in literature, and what learnings can be drawn. The study highlights the important role of design for society and shows approaches of designers towards solving real-world problems. Self-cultivation of designers seems to be an important factor in rethinking the proximity between social responsibilities, sustainable considerations, change opportunities, and market competition in design.

Interdisciplinary Art and Design Projects

63319

Collaborative Strategy for the Construction and Graphic Representation of a Cultural Ecosystem Involving Participatory Design

Diego Mergener, University of Porto, Portugal

Pedro Cardoso, Aveiro University, Portugal

Bruno Giesteira, University of Porto, Portugal

The main theme of this work is games as tools for promoting empathy, inclusion and teamwork in both academic and professional environments. Its objective is to present these results obtained from the realization of workshops that used a participatory design approach that resulted in the identification of the main themes and subjects that constituted the Cultural Ecosystem derived from the concepts of Misha Titiev. The methodology, tools and techniques used during each workshop are described, as well as the results after completing the thematic analysis of the information generated with each partner. The project has a partnership with: (1) Association of Ludotecas do Porto, which contributed to the aggregation of information on the Social Dimension; (2) the University of Porto's Inclusion Support Nucleus, which contributed information regarding the Physical dimension and (3) the company Mind Revolution, which has articulations with the University of Porto and contributed to the understanding of the Noological dimension of the Cultural Triangle. We end with a graphic representation of the synthesis of the results, presenting all the themes and their relationships with each dimension. As future work, we intend to identify the similar themes generated in each thematic analysis in order to identify the most recurrent problems and use them as a project requirement.

63521

Using Design to Connect Children Through Playful Discovery

Lee Brewster, Lancaster University, United Kingdom

Leon Cruickshank, Lancaster University, United Kingdom

Diane Potts, Lancaster University, United Kingdom

Nik Marsdin, Lancaster University, United Kingdom

This paper presents the first stage of FUSE, an example of how interdisciplinary researchers, university outreach staff and schools can come together to address the systemic inequalities in education exacerbated by the Covid-19 pandemic. Children's connections with their school, their families and with each other was central to this collaboration. Children were encouraged to explore their domestic situations and the materials and objects they found available to them through playful discovery, utilising a series of prompt posters and a box of carefully chosen materials. The results of their playful and creative activities were shared using a number of return pathways including mobile phones, photos and physical artefacts. Using collaborative design methods, semi-structured interviews and visual documentation of artefacts we have identified a number of tools and techniques that have helped to engage and make connections with children, school teachers and peers, as was intended. Unexpectedly the project has also strengthened the connections that children have with their siblings, parents and grandparents through imaginative, experimental and playful activities. This paper shares the elements from this project that helped to create the mindset for a playful approach to discovery. Through an analysis of the multiple return channels that tell us about the way the FUSE boxes were used we map how this has had an impact on the children's approach to discovery-led activity, to schools changing approach to non-punitive interventions with challenging children and how this is informing policy development within these schools.

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Learning Practices in Art & Design Education

63466

Drawing and Ideation Process at Design Education: A Systematic Literature Review

Dimas Rifqi Novica, University of Lisbon, Portugal

Elizabeth Wianto, National Cheng Kung University, Taiwan

Susana Campos, University of Lisbon, Portugal

This paper reports findings from a systematic literature review focusing on student drawing exercises. This systematic review aims to answer a research question: What is our current understanding of drawing as an exploratory method for students in design education? We looked into papers within a ten-year period, English written journals, and proceeding articles containing undergraduate samples. Five electronic databases were included in the search: Scopus, Web of Science, ERIC, JSTOR, and EBSCO Host. We integrated the SPIDER tool to define specific keywords for qualitative research articles. Paper or computer-based drawing reports were included as long as there was a haptic experience. We focused on drawing and ideation processes involved in the exploratory phase of design. Some formats were excluded from this review: A meta-analysis, a scoping review, a review paper, and grey literature such as press releases, blog posts, case reports, and unpublished manuscripts. Drawing activities extraneous to our review were also excluded. We currently reviewing 30 articles (12 acquired from database search and 18 from citation search) using The CASP Quality assessment tool to extract contents and avoid bias. Overall, we will focus on the commonality between various empirical evidence of drawing for ideation purposes in the design education field. We hope to find common themes related to design learning, design process, and design thinking throughout the papers to advance drawing practice in the design education field.

Strategies for Promoting Creative Thinking

64368

Creative Strategies for Making Technology-based Decisions in Education

Tsvetelina Ivanova, university of Plovdiv "Paisii Hilendarski", Bulgaria

Nevena Mileva, University of Plovdiv "Paisii Hilendarski", Bulgaria

The article is dedicated to the specifics of creating creative strategies for making technology-based decisions. The rapid development of digital technologies requires a new type of design of creative thinking, which requires instant, correct and original making of technology-based decisions in the learning process. A study was conducted with a developed author's questionnaire for creative thinking and the formation of creative strategies for making technology-based decisions for education. The study was conducted with 89 students from different specialties of higher education institutions. The results demonstrate that knowing digital technologies from different classes and types, and the skills to needed to use their functionalities, are a predictor, but also a barrier to creative thinking. The advantages and challenges for creative thinking in making technology-based decisions are interpreted. The structuring of creative strategies depends on the knowledge of the technologies used, the motivation to learn and the self-effectiveness of the learners. Respondents form ten spaces of creative strategies for making technology-based decisions in education. According to the analysis of the data received from the respondents, creative strategies for making technology-based decisions motivate active learning and increase the efficiency of daily functioning.

Teaching and Learning the Arts

64392

Discussion on Teaching Design of Integrated Course of Picture Books in Primary School Based on Case Study

Yuhan Chang, Beijing Normal University, China

Picture books, as a form of books combining pictures and texts, have played their unique advantages since entering the vision of educators, bringing the edifice of beauty to children and constructing the spiritual habitat for both children and adults. As a unique form of children's literature, picture books not only shine in the field of parent-child reading and preschool education but also show their unique value in the field of the primary school curriculum and teaching. At present, most teachers and experts focus on the cultivation of children's language ability and artistic aesthetic ability by picture books, while some picture books have more diversified educational values. The picture book "Sky High" created by Germano Zullo and Albertine who come from Switzerland shows us the process of two rich men competing to build tall buildings in the folio pages of the book. Its exquisite art and conception contains the connotation of architectural aesthetics as well as the significance of wealth value. We will take this as an example to further discuss and think about the teaching design of integrated courses of the picture book in primary schools from the aspects of teaching objectives, objects, process and methods, especially exploring the educational significance of picture books in language, mathematics, art and science, which can broaden the vision of picture book teaching and provide a theoretical and practical reference for front-line teachers and curriculum experts.

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Teaching and Learning the Arts

64352

Effects of Social Media Features on Music Teaching and Learning During the Movement Control Order (MCO) Period

Jinky Jane C Simeon, University Malaysia Sabah, Malaysia

Resot Iggau, University Malaysia Sabah, Malaysia

The COVID-19 pandemic has caused many education organizations to make full use of various online communication platform technologies to continue teaching. This study aims to gain a deeper understanding of the usefulness of an e-learning platform for teaching and learning activities. It focusses on the trends of social media usage as well as the student's attitudes toward knowledge sharing. Survey research was conducted to examine the undergraduate music students on their music instruments learning during the lockdown period. The sample of the study consists of 70 music undergraduates of University Malaysia Sabah, Malaysia. Data were collected via online questionnaires using Google Forms. The music instruments teaching and learning activities during the lockdown period will be analyzed in the form of statistical analysis. Based on the analysis, majority of the music undergraduates gained less knowledge from online learning. Besides, this study found that their experience accompanies them as part of their studies. Network connectivity, especially in the rural areas has become a major issue for their online learning. Finally, online teaching has both strengths and weaknesses.

Visual Archives

64227

Black Life Matters: Did It Change Our Perception of Art?

Hala Georges, University of Northampton, United Kingdom

Through this presentation, I wish to share the research findings of the Tolerable Art project, and demonstrate how it will be leading to a 'creative outcome'. I will also be wondering if the 'creative outcome' of the project remains 'art' in the typical sense. Tolerable Art research project started in April 2022. It is concerned with the shift in perception of the visual representation of historical and political matters in this day and age, particularly after Black Life Matters movement. It is questioning whether the role of art has shifted from glorifying the most powerful, to raising awareness of societal issues and making a statement against injustice. In this instance we are referring to protests and sculptures' removals started in summer 2020, for examples; the removal of the statues of Sir John Cass and William Beckford in London. Audiences, following this movement, rejected the negative connotations of certain sculptured figures in relation to Britain's practice of slavery from 1663 until 1807. A historical study was conducted to find out the context surrounding the most problematic historical monuments in UK, which are related to slavery and colonialism. The results was used in a survey addressed to the public. Through this quantitative research, I was able to understand people's reactions to those historical statuses, and how their view has shifted in recent times. The innovative element in this project is responding to the research findings visually, in an attempt to try and create what would be a socially accepted piece of 'art'.

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