

International Conference

Digital Culture & AudioVisual Challenges

Interdisciplinary Creativity in Arts and Technology

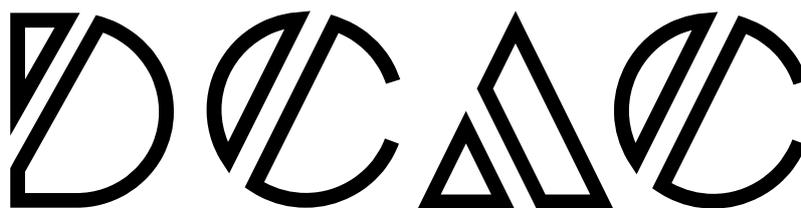
DOCA 2019

**BOOK
OF
ABSTRACTS**

10 & 11 MAY

Ionian Academy | 1, Kapodistriou str., Corfu





International Conference
Digital Culture & AudioVisual Challenges
Interdisciplinary Creativity in Arts and Technology

The International Conference on Digital Culture & AudioVisual Challenges will be held in Corfu (Greece) and is hosted by the Department of Audio & Visual Arts (Ionian University).

The aim of the conference is to bring together technology, art and culture in the Digital Era, as well as to provide a forum on current research and applications incorporating technology, art and culture in the Digital Era.

Researchers, artists and scholars are encouraged to participate in the discussion about the interaction between interdisciplinary creativity, technology, arts and culture. Authors are invited to present original papers for oral or poster presentation in the fields of New Media Arts and Digital Culture.

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KEYNOTE SPEAKER

BRIGITTE FELDERER

Curator, Cultural Theorist



Escaping The Least Common Denominator – A Short History of the Social Design Studio Vienna

Brigitte Felderer is the head of department "Social Design-Arts as Urban Innovation" at the University of Applied Arts Vienna. Her projects focus on themes within the field of cultural history, media history and history of science and have been presented internationally.

GUEST SPEAKER

NIKOLAOS KANELLOPOULOS

Ionian University, Greece



From the 2D Visual Art & Leonardo to the 4D Audiovisual Art & the Technartist

Professor N. Kanellopoulos is the Head of the Audiovisual Arts Department of Ionian University. He has served as Member and Vice-President of the Ionian University Council (2013-2017), as Head of the Audiovisual Arts Department of Ionian University (2007-2012), as Vice-President for the Computer Science Department of the Ionian University (2005-2007), as faculty member of the Archives & Library Science Department of Ionian University (2003-2007), as faculty member of the Computer Science Engineering & Informatics Department of Patras University (1987-2003), as Quality Assurance Director of the Athens Stock Exchange Depository (2000-2002) and as President for the Greek National School of Dance (2000-2002).

His published work includes 3 international patents, 8 thesis/books and over 120 scientific papers/studies. He has presented his opinion in the mass media on various scientific and cultural matters. He has written one theatre play as well as various literature essays.

GUEST SPEAKER

VOUVOULA SKOURA



Assemblage Process

Vouvoula SKOURA was born in Thessaloniki, Greece. She studied Graphic Arts at the Athens Technology Institute [A.T.I.]. She lived in London during the Greek dictatorship. She attended courses in Art History [1970] and a graduate course in computer graphics for video at Middlesex Polytechnic [1988]. For many years, she has been involved with experimental multimedia photographic techniques. Her works in film and video have been presented at international festivals and universities in over fifty cities including Athens, Beirut, Berlin, Bilbao, Brussels, Cetinje (Montenegro), Chania, Cracow, Delphi, Ghent, Frankfurt, Kassel, Leeds, London, Naples, Patras, Pristina (Kosovo), Sao Paulo, Sofia, Strasbourg, Tampere, Thessaloniki and others.

[Website: Vouvoula Skoura](#)

GUEST SPEAKER

ADNAN HADZISELIMOVIC

University of Malta



boatrr - Immersive Video on the British Waterways

Adnan Hadzi is currently working as resident researcher at the University of Malta. Adnan has been a regular at Deckspace Media Lab, for the last decade, a period over which he has developed his research at Goldsmiths, University of London, based on his work with Deptford.TV / Deckspace.TV (DTV). DTV is a collaborative video editing service hosted in Deckspace's racks, based on free and open source software, compiled into a unique suite of blog, cvs, film database and compositing tools. Deptford was formerly a wealthy area, but economic activity declined with the closure of the nearby dockyards, though a process of redevelopment and gentrification is underway, which has led to local debates about the identity and future of the area. DTV is less TV more film production but has tracked the evolution of media toolkits and editing systems such as those included on the excellent PureDyne linux project.

It is through Free and Open Source Software and technologies this research has a social impact. Currently Adnan is a participant researcher in the MAZI/CreekNet research collaboration with the boatrr project. The CreekNet pilot engages a diverse population within a limited geographical area, Deptford, in South East London, UK. Deptford is an inner-city area with a mixed socio-economic profile, including low income neighbourhoods, artist communities, student populations attending a range of institutions including Goldsmith's College, Ravensbourne College and the University of Greenwich; and urban professionals.

Adnan is co-editing and producing the after.video video book, exploring video as theory, reflecting upon networked video, as it profoundly re-shapes medial patterns (Youtube, citizen journalism, video surveillance etc.). The first volume more particularly revolves around a society whose re-assembled image sphere evokes new patterns and politics of visibility, in which networked and digital video produces novel forms of perception, publicity – and even (co-)presence. A thorough multi-faceted critique of media images that takes up perspectives from practitioners, theoreticians, sociologists, programmers, artists and political activists seems essential, presenting a unique publication which reflects upon video theoretically, but attempts to fuse form and content.

Adnan's documentary film work, in collaboration with his partner Lennaart van Oldenborgh, tracks artist pranksters The Yes Men and net provocateurs Bitnik Collective. Together they released the Bitter Lemons documentary mapping lemon groves on both sides of the no mans land of Cyprus. Bitter Lemons is the moving story of a friendship between enemies that survived against the odds over 30 years of separation. It provides a unique local perspective on the largely forgotten conflict in Cyprus, which became part of the European Union in 2004, from people who have lived with the consequences of this conflict, the memories, the minefields and the barricades, since 1974. Adnan's current documentary project focuses on his involvement in the media arts collective !Mediengruppe Bitnik. A collective of contemporary artists working on and with the Internet. Bitnik's practice expands from the digital to affect physical spaces, often intentionally applying loss of control to challenge established structures and mechanisms. Bitnik's works formulate fundamental questions concerning contemporary issues.

GUEST SPEAKER

ANNA VASSOF



Affairs

Anna Vasof's series of works «Affairs» deals with everyday things familiar to everyone: brooms, wipers, harmonicas etc., yet used in a way that is far removed from their ordinary designation. She constructs absurd and impractical situations from them so that familiar objects change their original functional purpose. In that way she is adding the element of the unexpected to everyday objects that dispatch us from everyday reality and allowing us to see the world in a new perspective.

Anna Vasof is an architect and media artist. Born in 1985, she studied architecture at the University of Thessaly (2010) in Greece and Transmedia Art (2014) at the University of Applied Arts in Vienna. Since 2004 her videos and short movies have been presented in several festivals, some of them winning distinctions. She's currently writing a Ph.D. thesis about an animation technique that she develops and at the same time working on designing and building innovative mechanisms for producing critical and narrative videos, actions and installations.

[Website: Annavasof.net](http://Annavasof.net)

Session 1: New Aesthetics - New Dimensions

1.1	Fusion of Art and Technology: The First Color Digital Art x Lighting Symposium and Workshop	Kyoko Hidaka
1.2	Future Relics: Samples of faith	Cecilia Vilca
1.3	Digital Art and its Institutions through Data Analysis	Janina Hoth, Rodrigo Guzman
1.4	Influences of lighting characteristics to human perception in immersive virtual environments	Stelios Zerefos, Antonios Koronaios
1.5	The challenge as an innovative approach to designing and composing the visual message. Investigating young creators' thoughts on provocative advertising and the disturbance of the visual and emotional quiescence that it brings	Apostolos Kordas, Sophia Stratis
1.6	A copyright law for computer generated artworks: Under what philosophical theory? Towards which social ends?	Maria Bottis

ABSTRACT

Kyoko Hidaka Shibaura Institute of Technology, Tokyo

Fusion of Art and Technology: The First Color Digital Art × Lighting Symposium and Workshop

In March 2019, Shibaura Institute of Technology, Color and Communication Design Laboratory will hold its Color Digital Art × Lighting Symposium and Workshop. In this abstract, the scheme of the first symposium and workshop on color theory and art education is introduced. The focus of analysis is on how art and technology can be fused in a way that can reach students in the workshop. (Note: This extended summary is being submitted in February 2019; the events are to be held in March 2019.)

Is it possible for people from different parts of the world to gather together and create interactive digital art? Can such art become a universal tool for communication? Or will the result be another Tower of Babel? These are the key questions guiding the organisation of this event.

The central aim of this article is to show a case study for creating digital art in a workshop setting with students and faculty members from diverse cultural, linguistic and educational backgrounds. The positive and negative aspects of creating digital art in these circumstances are discussed.

From 14th March to 17th March, 2019, the Shibaura Institute of Technology, Color and Communication Design Laboratory will host a four-day event in Tokyo called The Color Digital Art × Lighting Symposium and Workshop. The venue will be a basement room of the Shibaura Institute of Technology, located in central Tokyo. The basement room (with an area size of approximately 150m²) is dark and enclosed by a Béton brut wall. The topical theme for the event will be 'Colorful Playground for Children', and students and faculty will design the space using digital art.

The programme of this symposium and workshop is to work on production methodologies for digital art in cosmopolitan settings. The 41 students and 5 faculty members who are participating have institutional affiliations with the Montfort Del Rosario School of Architecture and Design, Assumption University, Thailand; Kagawa University, Japan; and Shibaura Institute of Technology, Japan. The students and faculty have amazingly diverse and cosmopolitan backgrounds, with specialisations in interior design, computer engineering, architecture and information design. Moreover, they represent many countries, not only Japan and Thailand but also Vietnam, Cambodia, China, Hong Kong, the USA and Myanmar.

Orientation will be held in the morning to summarise the entire idea of the event and introduce the facility and staff, followed by an icebreaker. The student group who are interested in intercultural communication will take the initiative to create a pleasant atmosphere. We provide each student group with the use of three Epson projectors, one Sony Bluetooth audio speaker, an Arduino microcontroller, LED lights and an allowance of 5,000 yen (approximately 40 euro) to purchase other necessary items.

As part of fieldwork on the second day, we will visit TeamLab's 'Borderless' exhibition in Odaiba, Tokyo. TeamLab is a world-leading corporate producer of digital art. For artistic and technological inspiration for the participants, it is critical that they view previous research and existing work.

On the third day, we will hold a symposium and a networking meeting to exchange thoughts regarding the digital arts. Joe Nattapol Suphawong (Photographer and Interactive Designer at Assumption University) and Jun Kosaka (Graphic and Space Designer at Waseda University) are the invited speakers. The moderator will be Kyoko Hidaka. During the symposium, students will present their artworks.

On the last day, a final presentation session will be held to share critiques and discuss the outcomes of the workshop and the symposium.

We firmly believe that art is a universal language that can be used to interact with others. There is currently no accepted standard for digital art workshops. However, collaboration with students and faculty from other countries to produce high-tech digital art can be a challenge. Our intention is to demonstrate a test case of a multilingual and multicultural workshop of digital art.

As with making a film, cooperative work is required and is more important than different skills, such as computer programming, object installation, sound recording and computer graphics. Establishing a common theme is crucial for developing a shared vision and goal with one's fellow students.

The boundaries and limitations in academic and professional disciplines can hinder creative potential, especially in digital art because its nature requires programming and graphic design in addition to architectural installation skill. During our event presentation, we intend to discuss digital art content further, along with actual interaction among students and faculty.

Kyoko Hidaka, Ph.D., is a colour theorist and the associate professor of Shibaura Institute of Technology in Tokyo, Japan. Born in Tokyo, she studied Studio Art and Anthropology in New York University (B.S. 1992); won Rotary Foundation Ambassadorial Scholarship to study History of Design in Royal College of Art (M.A. 1998); and Color Theory at Tokyo University of Arts (M.A. 1995; Ph.D. 2001).

Kyoko Hidaka's research centers on colour order system, colour chart and application of colour theory into modern design. She published the Japanese translation of Munsell's A Color Notation, Albers' On Designing and Berlin and Kay's Basic Color Terms.

ABSTRACT

Cecilia Vilca

Microscopía Electrónica y Aplicaciones en el Perú -MYAP, Peru

Future Relics: Samples of faith

Future Relics is a confrontation of divinity with assumed coldness of data. A research about the power of objects, as containers of information and subjective contents, their chemical data which is mutable and "contaminated" by their environment. Materialized in an installation that combines scientific methods and tools with new media.

Currently, cities speak through available torrents of information; nevertheless, objects have always talked to us. Through them archaeologists and scientists communicate with the past and show us other purposes than the utilitarian. They bring us closer to rituality of objects. Relics are objects of faith, which carry wishes. "It is a body part of a person, or all of it, revered by some reason or some object that is worthy of veneration. Reliquiae from Latin means 'what's left'". These "pieces of faith" in the past also travelled from one place to another.

This digital art project was selected to be developed during the artistic Despina Residency Programme, held in Rio de Janeiro, Brazil. The cities are living beings for me and Rio is a believer. My objective there was to create these future relics, with a sort of reverse engineering, and send them to the future. In the manner of a future archaeologist, I contrasted the belief with object's composition using electron microscopy, sending these samples to the laboratory in Lima, Peru. In that sense, they turned in to relics and travelled as they used to do in the past.

The result is the Set of Future Relics for Orixá Oxossi, Brazilian deity, an installation that travels between scientific exhibition apparatus, anthropological-spiritual process, catharsis and line of production of religious objects. It is a clash with the future. It is research, travel, process. They are souvenirs of faith.

Future Relics takes the methodology to the extreme to use science to "make" a relic, by relate electron microscopy to divinity. In Umbanda, Brazilian religion of African root, the Orixas are forces of nature and some materials represent each one, these are like their essences. If the objective was to find a container object and "fill it" with a belief, I took this premise to the extreme, creating an object made with the essence of the belief, the essence of the orixá represented in the material that symbolizes its power, its chemical information. Electron microscopy is a technique of analysis, where the resulting images are in themselves data, therefore, with this, the poetics pursues is processual than aesthetics or narration.

Four are the elements that make up Future Relics, two relics that are display with elements of their process of creation. "RELIC 1" is a 3D object printed, whose model was obtained by photogrammetry of electron microscopy images of materials representing Oxossi. "RELIC 2" a developed software that "turns" chemical data into sound through the transmutation of these SEM images. The main ritual of veneration towards the orixas is the dance. Therefore, sound is a fundamental part of their belief methodology. A video projection of electron microscopy images in different increments of three samples. The original samples used for the analysis are showed together. Finally, a Chronicle Text signed by writer/artist/believer.

It was exhibited at the end of the residency period in Largo das Artes, also at Rio de Janeiro, Brazil and later as part of Microverso exhibition, art / science exhibition, Universidad Peruana de Ciencias Aplicadas (UPC) in Lima, Peru both in 2016. In 2018 it was exhibited at Bio Summit 2018 Exhibition, MIT Media Lab, Cambridge, Massachusetts, USA, from October 26-28.

In this project not only converged several axes of my practice, such as art and science, conservation

and defense of heritage, more over all these were "contaminated" and overflowed borders. In the construction of this relic, I believed, and I created, adopting several roles: the artist, the believer, the scientist, the chronicler. A rampant method of work was born: My Chronicler Mode.

In conclusion, I understood that my practice was crossed by an identity search where spirituality and tradition shouted from my own artistic process through the understanding of the spiritual heritage left by our peoples. During the presentation I will explain the Future Relics project and the related projects but above all this method, the Chronicler Mode, that links all them that constitutes my own author epistemological rebellion.

From Lima, Peru. Artist, designer and teacher. Digital Arts Master's Degree, Universitat Pompeu Fabra, Barcelona, Spain. GIS and Atlas Design, University of Twente, The Netherlands. Her work is made with technology in concept and realization and explores its relations with gender, society and nature. Main goal and poetic are to encourage reflection through revelation using technology. Her projects range from those that are built with public participation and interactivity, to those that combine scientific methods. She has exhibited her work, organized exhibitions and gave lectures in Peru, Mexico, Bolivia, Argentina, Spain, Cuba, Chile, Norway, Colombia, Brazil, South Africa and USA.

ABSTRACT

Janina Hoth, Rodrigo Guzman
Danube University Krems, Austria

Digital Art and its Institutions through Data Analysis

The Archive of Digital Art (ADA) documents the work of artists in the changing field of digital art. In a new research project (2018-2019), institutional profiles have been created to reflect the interconnectedness between different stakeholders such as artists, museums, festivals, etc.

Digital art extends across knowledge domains and disciplinary boundaries to interconnect art, culture, science and technology. By its very definition, digital art is based on contextual, experimental, interactive and processual technologies that involve the actions and/or inputs of multiple persons as well as machines. Therefore, to document, collect and preserve digital art calls for a collaborative “bottom-up” participation by all involved stakeholders of this diverse community. The goal is to expand the artist-artwork dichotomy and the concept of development inherent to traditional art history not only by opening up the process of documentation, but by widening the archival practice and archival gaze towards every stakeholder. Since the institutional framework has changed significantly with digital art—with artists working in wetlabs or technology centers rather than in a studio, new educational degrees at universities, art schools and a shift in exhibition formats towards festivals and biennials—the influence of institutions with their specific areas of specialisation and research foci needs to be researched.

To document digital art in this institutional framework along with other information on collaborations, funding, subjects, technology, aesthetic, bibliography, events and exhibitions, the Archive of Digital Art (ADA, digitalartarchive.at) has developed an expanded concepts of documentation. ADA is, most significantly, a “living archive”, which continuously evolves through the participation of its international community members. Through an Open Access policy, peer-review system, and social software features, community members actively maintain their own profile pages, upload information and “socially tag” artworks with ADA’s media art thesaurus, as well as build new collaborations and research networks. As a supra-institutional and extensive database on digital art in its many variations and genres, ADA structures, interconnects and archives relational data for analyses in Media Art Histories and Futures to (re)trace and understand the technological developments, curatorial strategies and exhibition histories in digital art. The main research focus centres on how art, culture, science and technology can be documented and shared to deepen the collaborative research and disclose the interdisciplinary nature of the field in a historical framework. Ranging from the technologies applied for education, dissemination and preservation to curatorial strategies, publications, location, research foci, conservation methods, and institutional history, ADA’s database portrays digital art institutions as important stakeholders in the community. By connecting the uploaded information with existing data sets from artist, artwork and scholar profiles, the institutional framework becomes visible and research-able in regard to e.g. the exhibition of artworks/curatorial strategies of memory institutions, support of artistic careers/funding structures, mediation and teaching of specific technologies. to develop an international infrastructure of digital art production.

As part of a DARIAH Working Group grant (2018-2019), a new institution profile was developed to make more visible the agency of institutional stakeholders to display the international infrastructure of digital art. To reflect the changing landscape of the field, we created these profiles for diverse institutions beyond

museums and galleries (including collections, festivals, research centres, etc.).The team developed a new data input interface on the front end to best showcase this institutional infrastructure and invite institutions to update their data, use ADA's tools and exchange with artists and scholars via community features. From the back end, the data is interconnected in the SQL/typo3 database for relational data analyses and visualisations. By comparing and analysing geographical, keyword and technological data, the team can recognize artistic developments beyond individual case study analyses.

In collaboration with new and long-standing ADA community members, the team developed an innovative institution profile, which simultaneously administers usability for front end users and best data analytics for research purposes. From the perspective of media art histories, we want to demonstrate how the historical development of technologies, e.g. AI and virtual reality, can be retraced in its institutional condition. With the additional interconnected data, quantitative and qualitative case studies can be investigated on the influence of institutions on digital art production in regard to their respective research foci and areas of specialisation, strategies on exhibiting, collecting and preserving digital art, applied technologies in these fields of dissemination and archiving.

ABSTRACT

Stelios Zerefos, Antonios Koronaios
Hellenic Open University, Greece

Digital Art and its Institutions through Data Analysis

Summary: This research tries to identify lighting parameters that can influence human perception in immersive virtual environments (VEs). As a testing platform, an immersive VE was created, in order to investigate whether light intensity, light distribution and correlated color temperature can affect spatial perception of an immersive VR space.

Objective: The study of human perception in virtual environments has been a fruitful research field for several decades. Whereas it was found that there is a disparity between judgments of distance in a VR space, as well as a consistent underestimation of the size of the environment and distance to objects [1, 2], little research is based on the effects that lighting parameters have on human perception in immersive VEs.

The present study explores the influence of light intensity, light distribution (beam angle) and correlated color temperature (CCT) of light sources on relative distance perception (exocentric distance), stereopsis (3d surface/depth perception), perception of the directionality of light sources and perception of brightness, in an immersive VE [3, 4]. The results presented arrive from several test sessions with randomly selected individuals participating in VR walkthroughs with different lighting conditions in a simulated VE.

Methodology: This research is based on VR walkthrough test sessions that consisted of 90 randomly selected participants aged between 18 to over 70 years, divided into three groups for testing different lighting scenarios. Different lighting scenarios were created for each of the test groups. Two of the groups explored the effects of CCT, while the third group focused on the effects of different light intensities and light distribution. For each group, a subjective quantitative assessment was carried out, as there is no validated objective method in a perception-centric system, as is the case of VR [5].

The participants were required to enter a simulated VE and were informed beforehand that they would be asked questions, while instructions were also given on what to observe from specific points of view. The answers were recorded in real time by an interviewer, in order to obtain data more accurately.

The VE was modeled after the Erechtheion Caryatids area of the New Acropolis Museum in Athens, Greece, from architectural plans that were kindly provided by the architects, along with additional in-situ measurements and photographs, in order to produce a real scale experience model. The model was realized using 3ds Max for the geometry of the building and Unreal Engine for the materials, the lighting and the programming language used for the real-time simulation of the VE. The technical equipment, consisted of an Oculus Rift CV1 VR headset with a pair of motion controllers and three tracking sensors, connected to a custom workstation PC.

Conclusion: Results from the virtual walkthroughs show that, lower color temperatures (warmer light), and narrow beam light distributions, influence both the perception of the direction of light sources, as well as stereopsis (depth perception), while higher color temperatures (cooler light) affect the perception

of spatial brightness. These results also support real world experiments [6] that show that higher color temperatures have an effect on perceived spatial brightness. However, none of the aforementioned scenarios showed significant effects on the subjective perception of exocentric distances. The study concludes with demographic results showing perception differences between genders and age.

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Short CV Zerefos

Stelios Zerefos is an architect, Professor at the School of Applied Arts of the Hellenic Open University where he teaches lighting design. He has practiced architecture since 1999 and he has taught architectural digital design as a visiting lecturer at the National Technical University of Athens School of Architecture, sustainable design at the European Masters' Degree for Renewable Energy Sources in the University of Athens and the Piraeus Technical University. His research has been published in books, scientific journals, international and conference proceedings, while his architectural work has been published and acquired several awards in international and national architectural competitions.

Short CV Koronaios

Antonios Koronaios is an architect (UTH, 2004). His research interest lies in sustainable architecture, computational design, architectural visualisation and the application of virtual reality technologies. He has taken part in various international competitions, exhibitions and workshops to enrich his knowledge and experience. In 2010 he participated in the 6th Biennale of Young Greek Architects, as an external collaborator for the project "Retail Building in Psychiko" by Oikonomidis Architects. He is currently undertaking a Master of Arts in Lighting Design at Hellenic Open University. Part of his research work within his postgraduate course was demonstrated in the VR@GR meetup held in the Onassis Cultural Centre (Athens, 2018).

ABSTRACT

Apostolos Kordas, Sophia Stratis University of West Attica, Greece

The challenge as an innovative approach to designing and composing the visual message. Investigating young creators' thoughts on provocative advertising and the disturbance of the visual and emotional quiescence that it brings

Provocative design in advertising is a deliberate appeal strategy, that targets the emotional background of a part of the audience, and through its content it surprises, offends, challenges or violates values, social norms, laws, moral or natural perceptions. The use of the challenge in advertising is not only aimed at promoting products or services, but is often also used to inform about various social issues related to public health protection, such as raising awareness of cancer, discouraging alcohol and drug use, or problems related to vulnerable social groups of the population (female sex, children, homosexuals, refugees), such as prevention of domestic violence, racist behavior, etc.

The aim of this research was to investigate the thinking of new designers-creators with regard to invoking the challenge in advertising as an innovative design approach and as a tool for composing the visual message. The development and the formation of the research problem concerned the investigation of the impact of invoking the challenge in advertising on the recruitment or rejection of the message on the part of the young creators rather than the consumers. Consequently, one of the important factors that influenced the findings of the research are: foremost the younger age of the contributing creators, and secondly their ability to accomplish their intentions (invoking the challenge) through the design capability.

The research questions were based on two advertising campaigns: a.) "No One Deserve to Die", a non-profit organization "Lung Cancer Alliance" designed by Laughlin Constable (July, 2012), and b.) "Sentenced to Death" of the Benetton clothing company designed by Olivero Toscani (February, 2000). Both of these advertising campaigns point to the concept of death at the level of verbal communication, as a tool of visual persuasion for the promotion of goods or services. Another important factor influencing the research findings, is the introduction of a fundamental taboo of the concept of death and the management of this (concept) by young creators.

Finally, the main reflection developed during the research, adopts as a theoretical basis the perception that the formulation of provocative questions, through advertising, is just as important as the effectiveness of the venture itself.

Apostolos Kordas

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Apostolos Kordas is a Laboratory Teaching Staff at the University of West Attica, Greece, teaching digital image processing, typography and interactive multimedia at the Department of Graphic Design and Visual Communication, where she works since 1997. She holds a BSc in Graphic Arts, an MSc degree in Graphic Arts and Interactive Multimedia (Hellenic Open University) and is currently working on his PhD, focusing on the Visual Communication and graphic innovations in cinematic environments. For more than 30 years, Apostolos is actively involved in the fields of education, research projects, visual communication, typography, multimedia and digital publishing.

ABSTRACT

Maria Bottis

Ionian University, Greece

A copyright law for computer generated artworks: Under what philosophical theory? Towards which social ends?

Copyright law has always been founded upon the legal rule that only human persons may create works to be copyrighted. No physical forces, animals nor legal persons were deemed to be capable of creating an intellectual work protected by copyright. Not even pure skill and labor by a human which has led to a work without originality is normally seen as capable to be copyright-protected. Intellectual capability, individuality, statistical uniqueness and creativity are the very traits courts have been used to seek to award copyright to a work, necessarily from the above having been created by a human.

As time went by, and in connection with the information revolution, some kinds of copyrights started to be awarded to works which have been the pure result of labor and investment (the 1996 non-original database right is the most obvious example here), again by a physical person, a human, whose intellectual individual capability how started, to the horror of many scholars, to become irrelevant as a standard towards copyrights. The result of this endeavor in Europe only, as the US never instituted a database right, sui generis or whatever, was a failure: the utilitarian ends of the legislation did not lead to any increase of the European market for databases but rather the opposite was the outcome, leading many scholars and the very reviewers of the Database Directive to ask for the total ban of copyrights for works which did were only based upon investment and not intellectual human creation.

While this discussion has not come to an end, but has also not led us to any ban of these rules, a new field of copyright has started to again stir the copyright world: copyright for artworks 'created' by computers. The *Naruto* case, where copyrights were indeed discussed in an American court as possibly awarded to an animal, the monkey which had only pressed a camera's button, has also laid out possibilities of satisfying copyright interests by animals who happen to 'create' works. In the computer-generated works, the discussion is based upon whether the coder who writes the code upon which a work may be based can claim copyright under any legal or at least, a sound philosophical theory. Is deontology or utilitarianism as applied in copyright, able to support the granting of a copyright to a machine, robot, computer software, AI application whose function leads to a 'work'? Are any important societal ends served, by granting copyrights to machines or would this legal major change actually disturb normalcy and peace of our legal infrastructure? The paper aims to give some answers to these hotly discussed today questions, using as an example works of art from the 21st century created by humans and by machines.

Maria Bottis is an Associate Professor, School of Information Science and Informatics, DALMS, Ionian University. In 1985 she entered in Athens Law School first. She is a Honors graduate of Athens Law School (graduated first of class). She is a holder of a LL.M degree (Cambridge Law School UK) a LL.M degree from Yale Law School and a PhD, University of Athens. In 2000 she was appointed Faculty Fellow at Harvard University, Center for Ethics and the Professions. She is the Director of the International Society for Ethics and Information Technology. She has authored and edited or co-edited twenty one works (books-monographs) and has published more than seventy articles e.t.c.. in Greek and in English books and journals. She instituted the International Conference on Information law and ethics, ICIL, series. She has been the organizer and speaker in numerous symposiums, seminars, colloquiums e.t.c..

Session 2: Digital Culture and Technologies I

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ABSTRACT

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The fall of the fourth wall: technology, immersive theatre and the 'experience economy'

Abstract

The paper focuses on the production of 'experience' in experimental immersive theatre productions. It examines their creative processes as well as the various 'mixed reality' techniques that they use. It argues that these processes highlight a number of much broader ethical questions which are yet to be addressed.

Extended abstract

In contemporary capitalism, notes Maurya Wickstrom (2006) the theatrical performance has increasingly become the focus of business interest as a model of affective potential. Pine and Gilmore's (1999 -updated 2011) *Experience Economy: Work is Theatre and Every Business a Stage* named a seemingly widely recognized shift within advanced capitalist societies. Consumers, particularly highly prized 'millennials', are said to be increasingly shifting their consumption patterns towards the purchasing of 'experiences' over and above objects (Wallman, 2015). The European Commission's (2010:2) *Unlocking the Potential of Cultural and Creative Industries*, for instance, argues that "immaterial value [now] increasingly determines material value, as consumers are looking for new and enriching 'experiences'" The ability to create such experiences is now, they argue, "a factor of competitiveness". In the staged environments of the experience economy the corporeality and, ultimately, subjectivity of the consumer become central foci of commercial performance. Viewed in this light, 'cutting edge' theatre (Pine and Gilmore's original framing metaphor) could be said to constitute a model for, as well as a manifestation of, the quest to stage 'rich, compelling, and engaging experience[s]'(ibid:39).

Methods

The focus in this paper is on how UK immersive theatre companies stage and control 'experiences'. It draws upon the qualitative study of four established ('cutting edge') companies, of their creative processes, of their organization and of the technologies that they use in order to produce 'rich, compelling, and engaging experiences'. Primary data collection was carried out over two years and utilised a three-phase qualitative methodology involving in-depth interviews, participant observation and the examination of documents including images. The respondents were Artistic Directors, Producers and Actors and interviews were digitally recorded. Researcher's observations and reflections were documented in a research journal. The first author has working knowledge of experimental theatre. This knowledge assisted in the choice of appropriate case studies. The findings from the four theatre companies that were the main focus of this research were contextualised by empirical data from two other theatre companies and two internationally renowned UK visitor centres.

Anything goes?

In contradistinction to so-called 'traditional' theatre where audiences, confined to their seats, passively watching the action on the stage, in immersive theatre the boundary separating the make-believe world of the stage from the world of the spectator is removed. The conceit of a non-linear 'open-world', already familiar from computer games and other such 'virtual' environments, is extended to the 'real' world of the (no longer passive) audience who thus become active players within the play. CoLab, for instance, a leading UK 'pervasive theatre' company, includes among its various offerings 'The Hunt' in which participants spend a month as 'fugitives running away from police...A tube journey need never be boring again':

'We can accommodate to any level -to a performance in your front room, scaring a loved one on Halloween or alternatively kidnapping a friend, putting them on a plane and getting them take part in a game on an abandoned tanker in the middle of the ocean -anything goes' (Sherwin, 2016).

Such forms of 'pervasive theatre', it is said, allow 'the audience to direct the narrative, so no two performances are ever the same' (ibid). Digital technologies and video game techniques are clearly key mediators for such virtual-physical boundary crossings. They are thus often employed to introduce, facilitate and frame the live action, to 'augment' the reality of the play in various ways and, increasingly, to design the 'game mechanics' and narrative tropes of the play. At the same time, the move from the 'virtual' to the 'real' world of live action is not devoid of dangers and ethical tensions. As the data collected in the course of this research reveal, the intensity of the 'experience' of being chased for example, of witnessing close-up a realistically staged rape, or of being kidnapped by 'terrorists', can often be unpredictable and traumatic.

'Currently', argues Mary LaFrance (2013) there is no general code of ethics for theatre, experiential or otherwise'. A key finding of this research is an emerging pattern of tensions between the need to generate more and more excitement for the 'experiential' consumer and the need to consider and implement ethical standards, standards that are yet to be codified or even adequately formulated.

ABSTRACT

Angeliki Malakasioti

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The Art of Melancholy - Decoding Affective Spatialities in Video Game Environments

SUMMARY

Widespread digital culture, and especially the phenomenon of immersive gaming environments, are developing today at the speed of an epidemic. The study explores what is already on the horizon: the quest for genuinely emotive spaces, focusing on the case of melancholy, a rather prevalent atmospheric ambience appearing in contemporary gaming. In this context, contemporary video game environments and design aspects are explored in terms of their ability to deliver digital and interactive spaces capable of affecting their users on an emotional level.

OBJECTIVE AND METHOD

The paper attempts to translate the idea of melancholy into a textual-spatial construct. Melancholy is a timeless concept, as well as a phenomenon with clinical, scientific, artistic, or philosophical implications. Over the centuries, the melancholic condition has been interpreted as a sinful state of mind, a silent disease, a type of idiosyncrasy, a proof of genius, or a potential source of inspiration.

Melancholy has an inherent relationship with space. This relationship is bidirectional, while at the same time it constitutes a straightforward reference to allegorical or symbolic constructions that do not relate to a strict conception of physics or mathematics, but to a kind of anthropological space, a space that is both elusive and immeasurable. Also, the descriptions of the melancholic condition from the past to the present have always been inseparable from the metaphoric use of spatiality. Thus, the research takes the form of a conceptual 'dissection' – it originates from metaphoric schemata and finally tracks a series of design elements that are in dialogue with the melancholic condition and all the innate characteristics of this intimate and deeply ambivalent human state of mind.

In this context, the study ventures the invention of a common ground among different interpretations of the phenomenon- philosophical, textual, medical, artistic– the phenomenon of melancholy is decoded and spatialized through a comparative reading of abstracts of symptomatic descriptions, visual representations, poetic verses, commonplace symbolisms, or theoretical approaches which attempt to capture in a distinct manner its vague and complex nature.

On a parallel level, these spatializations are discussed in the context of videogames. Videogames are nowadays a powerful cultural phenomenon which is open to numerous interdisciplinary approaches. At the same time, the modern manifestation of contemporary digital 'selves' is related to 'visceral', deeply personal experiences of mental landscapes which are affected by their interactivity with electronic or virtual environments. The individuality of the user meets the digital sphere and adopts the 'symptomatological' characteristics of the new spaces one experiences.

The paramount presence of melancholic atmospheres in video games constitutes an interesting initial observation. Furthermore, video games with melancholic features are nowadays juxtaposed to a plethora of scenarios: sociocultural issues, psychological conditions, sadness, inwardness, sublimeness, beauty, utopia and dystopia, life and death, and other mature content.

CONCLUSION

The study aims to capture the almost 'sacred' interior landscapes of the melancholic subject, transforming them into a series of observations about the use of representation, narrative, interactivity processes, audiovisual language, and highlighting them as potential factors of experiential design in the context of gaming culture. This gesture implies the externalization of an inner mental state, its demystification, its juxtaposition with a more objective, accessible world of ideas, and finally, its further correlation with the architecture of affective ambiences as well as with contemporary design issues in general. Angeliki Malakasioti is an architect and academic, teaching courses on digital media design, audiovisual representations and transcendent culture in different Universities. She has completed a Doctoral Thesis on the "Anatomy of the Digital Body - Spatial Aspects of the Self and the Immaterial on the Web" and currently she is developing a post-doctorate research on "melancholic spaces". Her academic and artistic interests deal with digital experience, immaterial architecture, audiovisual narratives. She has participated in multiple international conferences, art and film festivals and exhibitions and she has received prizes of experimental film making, photography and "art as research" contributions.⁷

Angeliki Malakasioti is an architect and academic, teaching courses on digital media design, audiovisual representations and transcendent culture in different Universities. She has completed a Doctoral Thesis on the "Anatomy of the Digital Body - Spatial Aspects of the Self and the Immaterial on the Web" and currently she is developing a post-doctorate research on "melancholic spaces". Her academic and artistic interests deal with digital experience, immaterial architecture, audiovisual narratives. She has participated in multiple international conferences, art and film festivals and exhibitions and she has received prizes of experimental film making, photography and "art as research" contributions.

ABSTRACT

Antonia Plerou
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Mind games: Brain plasticity and cognition enhancement

Recently, several neurological studies suggest that the brain is able to adapt itself throughout the years. The brain is influenced by senses, actions or thoughts and imagination through a long process (neuroplasticity) and has the ability to create new connections between brains cells (neurogenesis). Hundreds of neurons die every day, nevertheless the brain has the ability to renew these cells constantly. Neuroscientists call this continuous process as 'neurogenesis', while external factors can affect the extent and intensity of this ability. Scientists concluded that the brain is able to change through various stimulations and that neuroplasticity keeps the brain healthy using active and mental training. To stimulate neurogenesis and neuroplasticity, doing exercises and playing brain games are suggested. Brain or mind games are involved with lifelong neurogenesis (creation of new neurons) and neuroplasticity (how the brain changes itself responding to experience). Brain games are a challenge of mental improvement and boost cognitive performance. Brain games also challenge and enhance abilities like memory, logic and attention, through a variety of brain exercises based on scientific research. Although brain games are suggested in order to improve cognitive functions and performance, are also considered to be fun and engaging. In this paper, neuroplasticity and neurogenesis procedures are described, as well as the way mind games are involved in order to enhance brain cognitive performance.

ABSTRACT

Andrea Gogova**FMC TBU Zlin, multimedia and design, Slovakia****From Grid to Rhizome: a Rethinking of a Layout arrangement of the Post-digital Text**

The paper which is based on interdisciplinary research looks for arguments that would lead to a change in the thinking of the post-digital text layout which is based on grid. Collecting relevant arguments and analyzing the historical and cultural condition of evolution of the grid system, we can recognize it as a cultural pattern. The pattern could be changed by actual nature of the process. To go back in history, grid as an arrangement was well known from Neolithic urbanism (Mohenjo – Daro, 3000 BC). But the biggest interest in the aesthetic principle of grid is known in research of Modern movement (Wittkower, 1949; Tchichold 1928). In typography we can see an influence of typographical tradition and mechanical possibilities of print. In the geometrical Cartesian rectangular system of grid the text was ordered and controlled. Rosalind Krauss (1979) declared that the modernity of modern art was based on the grid aesthetics. Seeing Vinca figures, Apollinaire's Calligrammes, ergodic literature, Carson works, Lindenmayer system, Deleuze diagram, OULIPO, Transitoire Observable works, hyper-novels and many other examples where the cultural pattern and also functional principle of grid does not work. We considered that the "Modern" thinking about grid is a residuum in the post-digital text order. As Lev Manovich (2001) wrote in "new media" we have to count with Modern research approach of perceiving "old media" but we also need to count with its specificity. New possibilities of post-digital media, mainly computational works as a "new logic behind the Media"(Manovich, 2013) which are organised by algorithm/software, changed the condition of writing and reading. Contemporary research of digital typefaces brought up new possibilities to use parametric and variable/generative fonts. These fonts are based on a principle of dynamic changes but still are closed into mainly static grid arrangement of layout. A text layout which was primarily built up as a static form has different qualities and principles of creation in a process. It is caused by the transmediality of digital data, performativity, generativity and coincidence possibilities. Philippe Bootz (2005, 2010) describes the "procedural model" as forms in programming. The procedural work is presented by the running and reading processes together with cognitive limitation which derives from actual possible representation in the development of model reader, the aesthetics of frustration and meta reader. The representation change shape, not as object but in process. In a non-finite re-order it is possible to realise continuum changes and evolution of a system of a post-digital text layout. The process is not in a fixed definition of Cartesian geometry co-ordinates, but a flexibility of generative algorithm. Relevant arguments to find a flexible model led us to rhizome, described by Deleuze and Guattari (1980). Rhizome is recognized as a model of how to change the view of fixed relations of a close system, which is represented by the grid, to flexible relations of an open complex system. It leads to a change of the aesthetic paradigm in typography from designing a text layout as object form to a designing process as such.

The cultural pattern made by grid which is applied in layout of a text could be changed by actual nature of the process. In the model of layout based on rhizome we are able to organise a text to an affect it can meet most of the preferences in the post-digital writing and reading and also use a post-digital text in the condition of artificial intelligence of posthuman self-organised systems. By the operational logic that emerges in the interplay between data, process, interface, interaction, author and audience, the parametric/generative fonts could work well. It provides new creative possibilities of post-digital layout organizing in the unfinished system, which is based on processes. It leads to a change of the aesthetic paradigm in typography from designing a text layout as object form to a designing process as such. The main aim is not rethinking new forms of objects, but focusing on a process of unfinished reorganisation of arrangement, which is caused by a "swerve" (Brassett, 2017).

ABSTRACT

Nikos konstantinou, Andreas Giannakoulopoulos,
Iraklis Varlamis

Ionian University, Greece | Harokopio University of Athens

A Virtual Tour in Ancient Worlds

3D virtual worlds have been utilized as educational platforms for over a decade attracting the interest of educational community (Barab et al. 2012; Connolly et al., 2012, Tüzün&Özdiñç, 2016; Konstantinou et al., 2016, Vrelis et al. 2016). The main advantages of 3D environments are their participants' high degree of motivation and engagement combined with the authentic and collaborative learning as well as the ability to construct cognitive artifacts.

The purpose of this paper is to present the experience and learning outcomes Greek 16 year old students had in a 3D online project. In this project the main concept is based on a virtual journey in 3D simulated ancient worlds. The 3D platform was used as the infrastructure to gather students together from two countries, Greece and Turkey via an etwinning collaborating program. Students were taught how to build 3D simulations and representations of ancient monuments from their countries. After constructing the 3D content, students were asked to write dialogues in order to organize a role playing game simulating an event that would have taken place in their country's monument. All students worked in groups, collaborating with each other in order to complete the project.

The main objective was students to experience aspects of local history and to inform their peers from their partner country about the local monument.

Other objectives were:

- to browse and use basic elements of a three-dimensional virtual world.
- to construct 3D digital objects
- to store, retrieve and organize digital files.
- to communicate and cooperate with Turkish students while they were constructing the 3D content and while they were writing the role-play game
- to cooperate in order to solve problems
- to develop their critical ability through interaction with the environment and others
- to write the dialogues for a role playing game using their imagination and creativity
- to cooperate with local authorities (Archaeological Service, Municipality) for the collection of information

First of all, the Greek students were assigned to do an online search for information about Nekromanteion, the monument they had chosen to represent in the 3D environment. As part of this first step, we organized a visit to Nekromanteion.

Next step was to provide our students with the necessary instructions in order to get familiar with the virtual environment and construct virtual items in order to build the monument. Within the environment the students from both countries were able to participate in virtual meetings (using voice chat), doing small construction steps and gradually completing the final structure of the overall monument. The students worked in groups building 3D objects one or two hours per week for the second and third month. Subsequently, they thought of an imaginary event which would have taken place in the authentic environment of the monument during the era of its operation and they wrote the dialogues that were used for a role playing game. The students spent one to two hours per week during the fourth month in order to write the dialogues for the role playing game. All the material which was produced during the program was gathered in digital form. The final stage was the role-playing game, where 8 students impersonated persons of that time engaged in a imaginary event. The final product was the role-playing game which was filmed as an animation film.

The sense of «presence» (like I'm there) is a major advantage of a 3D virtual environment. Students during the construction of virtual monuments were able to feel the coexistence of their peers (from the other country), to solve problems together in real time, to share opinions, to interact with each other, to make jokes and anything else which describes the meaning of collaboration. The sense of this coexistence in the virtual environment enriched the experience of collaboration between students from the two partner countries and evolved in a form of "virtual hospitality", consequently students had the opportunity to feel closer to their foreign peers.

During the whole project, we confronted technical problems such as performance issues and interface difficulties similar to those that are cited in the literature (Gregory et al. 2015). However, the overall balance was positive. Students from both countries had the opportunity to unleash their creativity, to gain and exchange knowledge in an experiential way through the dialogues they wrote and the role-playing game they organized and participated in the virtual environment.

Nikos Konstantinou is an ICT teacher at the Kanalaki High School, Preveza. He previously worked as a Microsoft Certified Systems Engineer in the private sector concerning the design and installation of network systems. He received his MSc in Virtual Communities from Panteion University. He holds a PhD in the field of Virtual Worlds and Game Based Learning. His research interests vary from educational technology, game based learning and gamification to virtual Communities and their application to education. He has published some articles in international journals and conferences concerning the use of 3D virtual learning environments in the learning process, serious games as an educational tool and teaching programming through digital games.

Andreas Giannakouloupoulos is an Associate Professor at the department of Audio and Visual Arts of the Ionian University, where he teaches courses related to Internet Communication, New Media and the Web Technologies. He holds a BA (Ptychio) in Economics from the University of Athens (UoA), a BA (Ptychio) and a Master of Arts in Communication and Media Studies from UoA, and a Master of Science in Logic from the University of Amsterdam. His doctoral dissertation, approved by the University of Athens, was in the field of web accessibility. The main areas of his academic activities are computer mediated communication, web technologies and e-learning systems as means of effective online communication.

Iraklis Varlamis is an Assistant Professor at the Department of Informatics and Telematics of the Harokopio University of Athens. He holds a PhD in Informatics from Athens University of Economics and Business, Greece and an MSc in Information Systems Engineering from UMIST, UK. He has been involved as a technical coordinator in a number of EU funded projects concerning knowledge management, data mining and Machine Learning. He has also coordinated several national R&D projects concerning data management and personalized delivery of information. He has authored more than 100 articles concerning text and graph mining and intelligent applications in social networks and the web and received more than 1600 citations. For more information visit: <http://www.dit.hua.gr/~varlamis>

ABSTRACT

Panagiotis Ioakimidis

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Internet Culture

Information and communication technologies (ICT) are innovative and modern and innovation is what is most needed nowadays. The entry of new technologies in our daily life has provided us with open access resources and transparency in all sorts of human activities be it social, economic, cultural, in science or education. In the world of museums, they have brought flexibility and efficiency in communicating ideas, knowledge and upgraded services to the visitor. E-culture has transformed most of museum functioning and digitized its collections so they became on line and open to all. In this experience report, thorough research was conducted from August 2018 to January 2019 in Greek museums and cultural settings, on new technologies.

Firstly, used for registration, documentation and handling of collections, moving to upgrade the display of exhibits, now necessary tool for the design and implementation of electronic format that serve experiential learning and interactivity in educational programs. The multimedia applications chosen are mostly the Audio-Visual Equipment, touchscreens, digital electronic museum games, audio-guided tours or virtual reality applications. The use of new technological devices contributes to better quality in museum exhibitions and administration. The visitor utilizes all his senses in a dynamic way and makes the museum experience outstanding and at the same time the museum more welcoming to its audience. This harvesting of new technologies in the museums has created a friendly atmosphere to all people wanting to learn about the exposition.

Remarkable is the fact that handicapped people find the design and demonstration of museums more receptive and beneficial now with these technologies making the outcome of learning more convenient. Additionally, the use of virtual tour of a museum helps citizens in more remote geographic areas become familiar with its demonstrations. Also, the integration of new technologies in museums proved to be very valuable for the museum staff assisting them with functions such as security control around presentations or monitoring and registering conditions in the museum. Digitization of museums allows educational learning become more efficient and effortless for students. Animation and virtual reality tours contribute to such learning and in collaboration with teachers and museum personnel make the experience an exceptional one.

As a conclusion, new technologies have entered our lives and are expected to redefine the traditional role of cultural organizations and associations that manage and cultivate cultural heritage aiming to documentation, presentation and exposure to the public. New information and communication technologies provide us with the ability to better exploitation, management and promotion of Greek cultural heritage while at the same time represent new means of creation and expression.

Session 3: Art and Technology

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ABSTRACT

Vasileios Bouzas

University of Western Macedonia, Greece

Contemporary Internet activism and its artistic perspectives

The paper explores the forms of modern social interference as they are developed in our days through the use of Internet. It examines and analyzes through specific examples the categories, the characteristics, the historical continuity as well as the artistic identity of online practices that aim to change and reform the existing social structures.

Nowadays, in the days of the Post-modernity, the moves that are being developed are not about narratives that promote radical changes of the society but rather radical movements that target much more smaller scale social changes. Thus, we are in front of a series of movements that develop practices relating to consumers' identity, rights and obligations, national and linguistic issues, gender issues, civil liberties issues, environmental issues, waste management issues.

Within such an environment, the paper explores through the analysis and the commentary of specific examples, the characteristics and the historical continuity of various categories of online practices that aim to change and reform existing social structures. It explores the features of the composition of the population groups constituting these networks as well as the diversity of their practices.

It explores the historical continuity, the relationship between these practices and past well known Art movements such as the Dada, the Surrealism and the Pop Art by defining their common practices that challenge the dominant culture by the use of everyday practices that promote political messages and their extended resistance to the spectacle society through collective practices that are opposed to the dominant political structures as they are formed by mass media.

It aims to define the characteristics of the practices that integrate them into the field of tactical media and relate them with contemporary theoretical frameworks.

Recognizing the importance and the difficulty of classifying as an interpretative method and by the use of specific bibliography, it explores the main categories where Internet art and technology meet in the effort to resist and interfere with the dominant structures. By presenting and analyzing specific examples It explores the different types of online intervention practices as they have been developed by multiple forms of individual or collective actions and their artistic historical background. The examples focus on cases involving both the Greek and the global territory.

More specifically the provided examples that are analyzed form different categories based on features such as:

-The interpolation, the distraction and the transformation of meanings contained in the dominant aesthetic forms of the communication methods of corporates as well as of the folk culture,

-The participatory journalism and the subsequent enrichment and extension in different directions of the information, which is provided to the public, that may include marginal communities,

-The developed self-organization and management practices through the creation of open-source communities as well as the use of code as a force to reveal the imposition of the sovereignty of the media, the corporates and the state and as a tool of resistance reaching the limits of sabotage,

-The ways that various web communities are using the medium to develop collective resistance in the real world.

By analyzing the specific examples and their developed online practices of social intervention, the paper attempts to identify the unique characteristics of these practices in terms of their methodology and aesthetic identity as well as their artistic background and identity in relation to those which exist in the physical space.

Bouzas Vasileios studied Fine Arts at the Athens School of Fine Arts and got his MFA on computer graphics and interactive media at Pratt Institute of New York. His interests include drawing, painting, photography, audio, video, and interactive media. His work consists mainly of audio-video installations and explorations on internet art. He is currently an Associate Professor of Fine and Applied Arts at the University of Western Macedonia, Greece

ABSTRACT

Alexandra Antonopoulou, Eleanor Dare University of the Arts London

The riverine Archive: AVR and preserving the contingency of digital heritage

This paper is about cataloging the material developed in collaboration over 10 years as part of a project called the 'Phi books'. The Phi books is an interdisciplinary collaborative project initiated by Dr. Alexandra Antonopoulou and Dr. Eleanor Dare in 2008. It has employed algorithmic narrative, storytelling, audience participation, code-writing, performance, sophisticated motion tracking technology, VR as well as custom software to explore how borders, walls, and doors facilitate collaboration.

In this paper, the authors would like to present their interested in the large amounts of material that were lost, forgotten or hidden in layers of language and code over time. In response to this, the authors constructed an alternative methodological approach called the riverine archive that interrogates and reframes what an archive can and cannot represent. We challenge the idea of an archive as a fixed account of our project since its process and intentions would contradict their methodological approach; this is based on physical, body-to-body performance relationships. This paper instead introduces the idea of an archive that is in constant flux, a mutable structure, one that celebrates the idea of occlusion and the value of intersubjective emergence. We are interested in an idea of a mutable archive that resists to fixed documentation and leaves space for the non-recordable energy of togetherness, collaboration, and performance. It allows for data to dip beneath the surface and re-emerge when variables come together.

As part of this the paper the authors discuss what are the purpose and the implications of AVR (augmented, virtual and mixed reality) for collaboration concerned with preserving the contingency of our digital heritage. Our work as designers, technologists, writers, as well as academic researchers, seeks to identify the chances and challenges of VR collaborative environments, adopting an Interdisciplinary and intermedia approach, at the intersection of the gallery, games, film, theatre and fine arts.

Dr Alexandra Antonopoulou is the Course Leader for the 'Certificate in Higher Education: Preparation for Design, Media and Screen' at the London College of Communication, University of the Arts London. Her research examines design and story-making as tools for life and engages with wider discourses on design pedagogy, power dynamics in interdisciplinary collaboration, narrative theory, interaction design and science communication. Alexandra holds a PhD in Design from Goldsmiths; her work has been showcased in major galleries in London such as at the Victoria and Albert Museum, the Tate Modern, the Design Museum, the Whitechapel Gallery as well as various international institutions.

Eleanor Dare is the acting Head of Programme for the MA in Digital Direction at the RCA, she has a background in Arts Computing and programming, specialising in Artificial Intelligence within a situated, embodied framework. Much of her work has addressed the computational understanding of Natural Language and human culture as well as the tensions between local and global modelling of human knowledge. She has a PhD and MSc with Distinction from the Department of Computing, Goldsmiths, as well as an MA with Distinction in Creative Writing (OU, 2018). eleanor.dare@rca.ac.uk

ABSTRACT

Jacqueline Simon
United States of America

Challenges of a Sound Artist: Can we listen without looking?

ABSTRACT: Our global modern environments are overstimulated. We are constantly focusing on many things at once, multitasking at every turn, as well as our thoughts of what's next. Focus and imagination have become redefined as a fragmented approach to the tasks at hand, whether it be having a conversation, working on an assignment, or finding a moment to relax. This environment is forcing us to use all of our senses at once. In doing so, we eliminate the ability to experience one sense at a time and be fully aware of our surroundings or give ourselves the creative freedoms to imagine.

Keywords: Soundscape, audio, visual, experiential art

1. INTRODUCTION

As a sound artist, I am challenged with finding ways to create listening environments for people to engage with my work and activate their imaginations. The purpose of this work is to explore ways of listening. A variety of approaches have been used to allow people to listen to the soundscapes such as live performance with a visual aid, the physical design of special equipment, headphones and rooms with controlled lighting.

2. MATERIALS AND METHODS

The audio in my work is recorded from daily life. Psychoacoustics, how we hear and interpret sounds is an inspiration for me. Sounds, such as the elevator closing, buttons being pressed or the wind blowing through a crack in a window is often ignored due to their perceived insignificance; unless something sounds unfamiliar, then imagination takes over. In my soundscapes I use recordings by editing and altering them to become an environment, they are characters in their own world, the listeners create their own reality using their imagination.

2.1 Ways of hearing

Several methods have been used, such as headphones and speakers in a room with controlled lighting while both of these options allowed listeners to listen it did not stop them from becoming early distracted and the experience was passive. Previously, I created a disco helmet with built-in speakers and people spent time in the helmet their attention was split between taking photos and surprise when they realized the headpiece had speakers and then listening (See Fig 1 & Fig 2). The performance with visuals was successful. People used the visuals to aid their imagination and feelings evoked by the soundscape. Visuals gave people something to do while listening (see Fig 3). The most successful were the two visors that are modular immersive environments, the listener is not able to see their surroundings in detail allowing them to disconnect. Unlike a blindfold, the visors do not apply pressure to the face, they connect to headphones. The exterior of one visor is reflective silver so people can see themselves looking at the person wearing the visor (see Fig 4). The listener in the silver visor cannot see out because the inside is opaque white. The other visor is white plastic with a hive like pattern that hides the wearers face from the public (see Fig 5).

3. RESULTS

With headphones or speakers in a room the listeners would often talk or wander around, not many stayed long. The live performance resulted in several listeners reported feeling like they were floating in space, one said they felt like an amoeba floating in a petri dish. With a live performance, people are more willing to stay until the end. The visors create a safe, cocoon-like, space to experience the soundscape and people use their imagination to create their own interpretation of the soundscape. The visors have a moment of adjustment, followed by a focus on the soundscape and then a sonic journey into their imagination.

4. CONCLUSION

For future iterations of this work, I would like to create multiple visors with different soundscapes as well as experimenting with time tables so people would be able to partake in the experience similar to a live performance with a start and end time.

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ABSTRACT

Milan Gary

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ROAM: A Wearable Navigation Device Designed by Locals for Travelers Seeking an Ethical Experience

ROAM is a wearable navigation device that uses a cooperative platform and the concept of ethical travel to promote a more dynamic cultural exchange between travelers and locals. It is hoped that this cultural exchange will lead to positive community development.

ROAM is a cooperative technology platform that allows the local community to design how travelers move through their space and experience their culture. With ethical travel at the core of this experience, the community has the power to control where this foreign revenue is directed and implemented within the community. Being led by the locals instills a sense of narrative embedded in the path being walked, providing a unique experience for the traveler. Creating an experience where this cultural and monetary exchange between local and traveler is rooted in and designed by the community, is the main aim for ROAM.

Wandering, conscious consumerism and community involvement are key elements to the ROAM experience. Rebecca Solnit is a writer, historian, and activist who has written extensively on the topic of walking and wandering. Her book, 'Wanderlust: A History of Walking' addresses the exploration of walking as a political and cultural activity.

"...the subject of walking is, in some sense, about how we invest universal acts with particular meanings. Here this history begins to become part of the history of the imagination and the culture, of what kind of pleasure, freedom, and meaning are pursued at different times by different kinds of walks and walkers." (Solnit, 2000)

ROAM encourages wandering by eliminating the user's knowledge of a point B. By eliminating a traveler's knowledge of a point B it heightens all of the senses, thus raising one's awareness while moving through a new space.

ROAM's physical form is a wearable device that navigates travelers through space using haptic feedback. My main research method is ethnographic research meaning I research by doing, making, and adventuring. In Nepal I only purchased items from locally owned shops and restaurants, witnessing my money going directly into the hands of the maker. Being able to meet the artists and communicate my appreciation for their work created a sense of comradery and respect for each other. This is conscious consumerism. It creates meaningful interactions that attach a narrative to the object being bought. My past travels allowed me to clearly define ethical travel and create a structure for it. Prior to my travels to Nepal, I created various system diagrams that map out both the mental and physical actions that should be considered and practiced when traveling ethically.

I have conducted tests with people visiting either New York City or Philadelphia. These visitors hailed from the west coast, abroad, or the midwest, in their mid to late 20's. My test subject, Jon, held an abstract map as we walked around both Harlem and Greenwich Village. This map simply had two arrows marked on it, he would then move in the direction of where he heard or felt the vibration. This research method is **bodystorming**.

“Bodystorming is physical brainstorming—dynamic, experiential, and generative—situated in methods of informance, or informative performance, combining active role-play with simple prototypes.” (Martin , Hanington , 2012)

He expressed that it was awkward to hold but admitted that this heightened his awareness of the things around him. Jon also found it exciting the element of a surprise destination. After seeing his discomfort with holding the product, it hit me that If the interaction between map and user is subtle and personal, then the look and feel of the product should imitate that.

The community involvement element is essential in this experience. Through interactive workshops and focus groups, I have brought community members together to brainstorm and express what routes, businesses, and paths best represent their community. Having the community design the paths gives them the power to lead travelers to unique businesses and organizations that play a significant role in community development. Leading travelers to these spaces and initiating a monetary exchange between the traveler and local keeps the money within the community. This conscious consumerism element by means of community designed exploration is key bringing in revenue specifically for the community.

As a result of these mini-experiments, ROAM has gone from being a handheld abstract map, to be a wearable device. ROAM has gone from being businesses oriented to community involvement oriented, thus turning into a cooperative platform that can be implemented in various neighborhoods around the world that are suffering from gentrification and being used by corporate tourism.

Milan Gary is a multidisciplinary designer, who creates within the realms of interaction, systems, and participatory design. She has spent the past two years pursuing a Masters degree in Interaction Design and Technology at Parsons School of Design in New York. Throughout her studies, Milan has worked as an UX/UI design fellow for both non-profits and corporate companies. Prior to attending Parsons, she spent a year living in Ho Chi Minh City, Vietnam teaching English and designing/developing an English curriculum for young learners. Milan has a creative and adventurous mind and soul who strives to design with community.

ABSTRACT

Yannis Mygdanis, May Kokkidou
European University Cyprus

Live coding in Music Theory courses

The rapid changes in our era have transformed traditional music experiences, requiring the development of new digital and multimodal music literacies (Kokkidou, 2016). In particular, new media and technologies have changed the way children react to music, broadening music-making practices and creating new ones (Aaron et al., 2016). Therefore, music studies should provide to student rich experiences and opportunities to explore new music-digital environments (Webster, 2012). Scholar of music education advocate for responsive pedagogical approaches which create meaningful connection between formal music studies and students' daily experiences and music preferences, aligned to the needs of our post-modern society (Kokkidou, 2016).

The courses of Music Theory consist a compulsory part of a conservatory music curriculum, in almost every country. However, their teaching-learning aims are no widely acceptable. Furthermore, teaching practices differ not only between educational institutions, but also between teachers who teach at the same conservatory (Rogers, 2004). Despite the significant changes of the last decades in the field of music pedagogy, music theory classrooms still remain restricted to traditional didactic models (Mygdanis & Kokkidou, 2018a). Music teachers tend to emphasize on scales, key signatures, chords, roman numerals etc., and the relevant terminology (Rogers, 2004). As a result, lessons are overloaded with music rules while music meaning is constructed and associated exclusively to these kinds of procedures (Kuoppamäki, 2010).

Current literature emphasizes the role of Music Theory classes in children's musicianship development (Kuoppamäki, 2010), focusing on shifts from describing the acoustic elements to social interactions through music (Westerlund, 2003), in order to children being able to form their own music life (Regelski, 2008). In this context, a concise Theory of Music curriculum should encourage informal ways of teaching-learning, using alternative methodological tools, integrating new technologies (Mygdanis & Kokkidou, 2018a), connecting theory and practice for the ultimate aim of music-making meaning (Kuoppamäki, 2010).

Live coding as a teaching practice is increasingly incorporating in music classrooms (Aaron, 2016), with positive impact to music teaching-learning procedures (Freeman & Magerko, 2016), resulting in musical creativity development and deeper music learning (Mygdanis & Kokkidou, 2018b). It is aligned to informal types of music learning (Kokkidou, 2016) and can be used in a wide range of music genres –from classical, jazz, and popular music to laptop orchestras– with endless possibilities restricted only by music-programmer's skills (Aaron et al., 2016).

The aim of this article is the presentation of live coding practices as new approach for Music Theory classrooms. Emphasis will be placed on advantages and the prerequisites for integration in music classrooms, through examples and practical applications with Sonic Pi, a creative coding language oriented to music education (Aaron, 2016; Mygdanis & Kokkidou, 2018b). Finally, we propose musical-educational activities oriented to music creativity and active-critical listening, taking advantage of the principles of interdisciplinarity, cooperative and experiential teaching-learning. All the above, consist a basis for new music literacy development, and can contribute at students' understanding of new music digital culture.

Yannis Mygdanis (MMus, MSc) is musician and a music educator. He holds a master's degree in Music Education (E.U.C.) and in Information Systems (A.U.E.B.). He obtains a Diploma in Piano, degrees in Music Theory (Harmony, Counterpoint, Fugue and Band Conducting). He received the Diploma in Music Composition and Choral Conducting with "Excellent and First Prize". He has composed music for theater and fairy tales. His scores of Toccata for piano and Thymises for prepared piano have been released by Poeta publications, while his first music album entitled "Ideal Voices" in Cavafy's poetry has been released by Entypois publications. He is a member of G.S.M.E. and currently works as a music teacher at the Municipal Conservatory of Amaraoussion and Ilioupolis.

May Kokkidou (MEd, PhD, post-PhD) is a music education specialist and researcher and she has published numerous papers and articles in international and national journals and conference proceedings. She is author of many books on music and aesthetic education. Her new book (2017, G.S.M.E.) is entitled "From kindergarten to early adulthood – Findings from a longitudinal study". She teaches as adjunct lecturer in the Post-Graduate Programs "Semiotics and Communication" (University of Western Macedonia), and "Music Pedagogy" (European University Cyprus). May Kokkidou served as president of the Greek Society for Music Education (2007-2012). Her recent work focuses on the areas of the music curricula studies, semiotics of music, musical identities, philosophy of music education, and the multi-modal music perception.

ABSTRACT

Panagiotis Triantafyllidis, Fotios Stergiou

Creative Group Plastik, Greece

A screen-less approach for visual Augmented Reality through dynamic image projection

Summary: In our paper, we propose a method of integrating systems and procedures, in order to overcome the usage difficulties and thus inefficiency of all current Augmented Reality techniques, as a result of the tether that is evident, with a monitor of some type.

Modern AR technologies in their current form, operate through a display of some kind. On this display, the user is presented with a final digital moving image composition, comprising by a live video feed as a background, augmented by digitally created content interactively and dynamically transformed to be aligned with the video contents. This display is quite commonly found in the form of a mobile device screen, or in other cases, in the form of a headset, worn by the user in front of his/her field-of-view like wearing a pair of glasses, but much larger and cumbersome, vastly more obstructive and difficult to use.

It has repeatedly been put forward by users that this display dependency is practically one of the most distinct weaknesses of AR, and a factor that because of ease-of-use, is seriously affecting the wide establishment of the technology as a major tool for information presentation and distribution. This difficulty, also noted by us on past AR projects, was the starting point to our research for a new method to effectively augment the real world. In our paper we present a new approach towards this mean's weakness, practically abolishing the use of displays and screens. To achieve this, we combine a series of proven tools, offered today by latest technology.

Specifically, we propose the replacement of the display, with a dynamic (moving) image projection onto objects and/or spaces, to augment the view of the real world. This means that instead of the established method, we present the user with a portable device that projects interactively transformed digital content onto the real three-dimensional space on a wide scale to achieve the effect of Augmented Reality perceived naturally with the naked eye.

To implement a screen-less AR functionality, a series of challenges emerged, and various problems had to be solved:

Dynamic Interaction:

A first obvious problem, was the requirement for continuous dynamic transformation of the digital content, so that it is constantly perfectly aligned with the elements of the real world, regardless of the user/device position and thus projection point. This is practically the major factor that differentiates our proposition with the techniques of projection video mapping.

Projection Related Issues:

The utilization and integration of a projector into our device, immediately introduces a series of problems varying from the portability issues, to dynamic focusing to achieve a clean image regardless of the device movement. What is more, there is an offset between the user's actual FOV and device's projection point that has to be corrected on projected digital content

Integration:

Our proposing method, is supposed to improve the current usability situation as an AR technique and has to be comparable with implementations on widely used portable devices like smartphones. This dictates that our device implementation, self-evidently, has to be wireless and portable. It also has to be intuitive to use and accessible.

In our paper we explain the proposed method of constantly offering efficient and transparent positional and directional awareness allowing us to accordingly transform the digital augmentation content, while offering solutions to the projection related challenges. We also present the results of our research on the method implementation and integration of mechanisms needed to create a compact, portable device with all the features that we consider important for the overall user experience.

Session 4: Digital Culture and Education I

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ABSTRACT

Ilias Karasavvidis
University of Thessaly

“Rendering” multimodal messages through visuals: An exploratory study of video effects in higher education

Introduction

Contemporary multi-screen societies are inherently multimodal. Becoming multimodally literate in these new textual landscapes involves two main interrelated challenges. First, students need to master the semiotic potential of modes and resources hitherto unexplored in traditional educational settings. This entails familiarizing with new modes (such as image, video, and audio) and appropriating new ways of combining these modes for meaning-making purposes. Second, students need to familiarize themselves with the software tools that enable the creation of multimodal messages.

Nowadays, the premier software application for creating and manipulating digital media is the video editor. A Non-Linear Editor (NLE) provides three main functionalities. The primary functionality is “sculpting” in time, which involves the temporal montage of the shots. The secondary functionality is “sculpting” in space, which involves creating shots through compositing disjoint visual elements. The tertiary functionality is “sculpting” the raw material, which involves using effects to tweak the source visuals and aural resources toward an intended outcome.

Mastering effects is of critical importance for crafting multimodal messages, as it provides students with an immense semiotic potential. The contribution of effects lies in the facilitation of the semiotic sculpting of the source visual and aural elements, thereby unlocking an extra layer of semiotic potential. The application of effects can lead to significant changes in the meaning of the underlying visuals. As semiotic tools, effects allow one to make distinctions, draw attention, emphasize certain features, and express very subtle meanings.

Participants, Setting, and Study Focus

While the first two video editing functionalities have received some attention in the literature, the third one has not been systematically explored. The objective of the present study is to explore how students use effects to compose multimodal messages in the form of digital videos. The study participants were 119 student teachers (117 females, 2 males) who attended an introductory, compulsory course on digital media. The main objective of the 13-week course was to introduce students to digital image, audio, and video processing for educational purposes. The course involved lectures (3 hrs week) and lab sessions (2hrs week). The following comprised the core course modules: (a) the grammar of static and moving images, (b) effects and their semiotic functions, (c) light and color and their semiotic functions, and (d) color grading.

The main course deliverable involved the creation of a multimodal message in the form of a digital video (DV). This DV constitutes the focal point of this work off of which the following measures were derived: number and type of resources (i.e. clips) per DV as well as number and type of effects per resource. The study addressed the following research questions:

- What are the main semiotic resources that the students use to create DVs?
- What is the type and rate of effects use in the DV projects?
- Are effects used differently in highly-rated DV projects compared to the low-rated ones?

Results & Discussion

Regarding the first research question, the results indicated that the students used a wide range of resources (static images, movie clips, sound clips, title clips) to create their messages, 6-121. On average, the DVs involved more static images (12.02 per DV) than video clips (7.59 per DV). Relatively few sound and title clips were employed by students in crafting their messages, 2.57 and 2.60 respectively.

As far as the second research question is concerned, the findings show considerable variability in terms of the effects used. More specifically, there were a few DVs in which no effects were used whatsoever. Inversely, one DV involved as many as 189 effects. On average, 20.72 effects were employed per DV.

Finally, with respect to the third research question, the analysis indicated that the low quality DV projects included mostly transitions. On the other hand, high quality projects included more effects, which were also more diverse. Additionally, these effects also tended to alter the source visuals substantially (e.g. completely desaturating a shot and increasing contrast).

The paper is concluded with a discussion of the main findings and their implications for future research. Dr Ilias Karasavvidis is assistant professor of learning with ICT in the Department of Preschool Education at the University of Thessaly, Greece. He is the head of the Science and Technology Laboratory in the same Department. He holds a PhD in Educational Technology from the University of Twente, a M.Ed in Educational Technology and an Honors degree in Teacher Education from the University of Crete. He has authored several international and national publications which focus on supporting learning with technology. His current research interests include learning with ICT, digital media, serious games design and development, Web 2.0 applications, and preservice/in-service teacher ICT training.

ABSTRACT

Emmanouel Rovithis, Agnes Papadopoulou,
Andreas Floros
Ionian University, Greece

Designing Audio Technology-Oriented Practices for Teaching Art to Primary School Pupils

This paper presents the Pedagogical Training Programme "Teaching Technologies in Art Education" delivered at the Ionian University Department of Audio and Visual Arts that guides prospective art teachers to utilise free audio software towards the design of educational scenarios that introduce primary school pupils to audio technology concepts and practices.

Introduction: Challenges of Digital Education

Digital applications have become dominant in fundamental aspects of human activity, including employment, communication and entertainment, granting users with tools to access, process and exchange information in unprecedented ways. The extensive impact of technology has stressed the need for modern learners to include information literacy in their palette of skills, a need to which education must respond by adopting novel, technology-oriented educational practices that will prepare them for the challenges of digital revolution. The Greek Ministry of Education and Religious Affairs has identified this newly-posed imperative. In the General Part of the Cross-Thematic Curriculum Framework for Compulsory Education it is pointed out that the role of school ought to be redefined, in order to meet the needs shaped by the modern information and knowledge society, which include, among others, to develop pupils' skills, abilities and interests, and to facilitate them to explore new information and communications technologies (Pedagogical Institute, 2003, Institute of Educational Policy, 2015).

Adjusting educational practices to technological challenges is a challenge by itself, since new technologies exhibit features that question traditional schooling: they are customisable and specialised, rely on diverse, interconnected and widely spread sources, and require hands-on action besides theoretical knowledge acquisition (Collins & Halverson, 2018). The human agents involved in the process raise some issues as well: on the one hand, many teachers are struggling to get accustomed to the new digital language, let alone to be up-to-date with state-of-the-art tools, whereas learners, on the other hand, are using new media since childhood and are thus processing information in a faster, more playful and multi-tasking way than that of previous generations (Prensky, 2005). The practices to be designed must therefore act in two parallel directions; the teachers must be informed and motivated to utilise digital media in the context of the learning objectives at hand, whereas the learners must be provided with creative ways to develop their skills and pursuit knowledge.

Setting the Project's Goal and Specifications

The benefits of utilising technology for educational purposes are widely supported in literature. Such approaches reportedly facilitate efficient access to information, develop learners' critical thinking, foster their creative and collaborative skills, enhance their self-esteem and self-guidance, overcome temporal, spatial, and social restrictions, and realize modern educational theories (Fu, 2013). Audio technology in particular, by relying on the processing of information mainly through the auditory channel, enhances learners' concentration, memory, fantasy and emotional response, and helps them to manage multi-layered data and complex tools (Targett & Fernström, 2003 ; Röber, 2005 ; Bishop et al. 2008; Liljedahl & Papworth, 2008, Parker & Heerema, 2008; Bishop & Sonnenschein, 2012; Franinović & Serafin, 2013). Moreover, it allows for experimentation regardless of musical background and can adjust to the special needs of the learning group (Wishart, 1992; Seddon, 2007). However, it has been observed that technology-oriented strategies are hardly applied in education, a fact, which is accounted for by inadequacy in funding, infrastructure, training, and motivation (Oliver, 2002; Collins & Halverson, 2018).

The Pedagogical Training Programme "Teaching Technologies in Art Education" of the Department of Audio Visual Arts at the Ionian University aims to address these issues by providing art teachers with expertise in digital audio-processing tools, as well as by guiding them to integrate those tools into educational activities for primary school students. To that end, the following points were taken into consideration in the design of the course:

- All software used is available online and free of charge, thus granting teachers with access to a freely distributed set of resources and eliminating any financial restrictions.
- The demonstration of the software starts from basic concepts and advances to more complicated ones, thus facilitating the participation of beginners.
- The suggested educational activities are simple enough to be addressed to primary school pupils, but not too simple to limit their creativity.
- Suggestions are complemented with a descriptive text, which specifies the targeted curriculum and learning objectives, as well as how these objectives are accomplished through the suggested actions.

Delivering Educational Paradigms

The paper describes one of the programme's assignments, which serves as a paradigm both for similar courses, which can adopt elements of the authors' methodology, and for teachers, who can draw on the reported educational scenarios to apply them in their classrooms or become inspired to develop their own ideas.

In that assignment, called "Sound Safari", the learners were introduced to a fundamental aspect of sound editing, namely to select and derive excerpts from a larger sound file. The respective functions of placing markers and exporting the defined ranges into separate files were demonstrated in the "Audacity" software. Then, the learners were asked to design an educational scenario based on those elements. A clear explanation of the initial audio material, the criteria for the selection, and their connection to the learning objectives had to be provided, and a sample exercise had to be done and presented.

Emmanouel Rovithis holds a Ph.D. in Electronic Music Composition at the Ionian University. His research focuses on the utilisation of audio games for educational purposes, and the design of accessible audio interactive systems through data sonification techniques. Recently, he has been teaching courses related to sound synthesis, as well as conducting post-doctoral research in the field of augmented reality audio at the Department of Audio and Visual Arts. Other previous activities include composing music in theatre and cinema productions, implementing interactive audio installations at international festivals, and designing educational software and workshops for various educational institutions.

Agnes Papadopoulou, Assistant Professor in the Department of Audio & Visual Arts at the Ionian University of Greece. Her scientific interests include Art Didactics, Art and Technology in Education, Neuroaesthetics, Philosophy and the Aesthetics of Media, Digital Arts, Cinema Studies, Performance and Technology. She has been involved in many projects in Primary and Secondary Schools in Greece. Her publications in both conference proceedings and journals are related to the teaching of art and creative technologies, the role of the arts as a means of effective learning and the activation of critical thinking. Her writings include two books and a theatrical play. She has also been involved in book editing. She has directed many theatrical performances, contemporary and new plays.

Dr Andreas Floros received his engineering and PhD degree from the dept. of electrical and computer engineering, University of Patras, in 1996 and 2001 respectively. His research focused on signal processing and conversion for all-digital power amplification. In 2001 he joined the semiconductors industry and worked in projects for audio delivery over PANs and WLANs. On 2008, he was appointed as an Assistant Professor at the dept. of Audiovisual Arts, Ionian University in the scientific area of digital audio signal processing. Today, he is a Professor at the same dept., serving as the Dean of the Faculty of Music and Audiovisual Arts. His research focuses on intelligent audio processing and synthesis, audio games and interfaces, augmented reality audio, 3D sound reproduction and affective-driven sound synthesis.

ABSTRACT

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Challenges of a Sound Artist: Can we listen without looking?

Summary

Digital technologies for collecting and processing data, such as sensors, microcontrollers and wearables, in the interactive art context, can reveal aspects of tangibility. An interactive installation titled "Origami Singing" and a STEAM education workshop were implemented in 2018, for M. Albani's MA diploma thesis (supervisors: I. Zannos, A. Floros).

Objective

Economic and technological developments require updated educational methods and synergies of different fields which will enable society to cope with challenges of the turning point in which it finds itself. Large-scale European projects reveal the European Union's interest on the Internet of Things in order to define technological, economic and social developments. Intelligent systems consisted of portable products (wearables) introduce new functions into clothes or accessories. However, serious concerns are expressed regarding the amount of users' personal data collected by companies trading various service packages. Arts can possibly contribute to sustainable development and innovation in the field of wearables and intelligent objects design, by keeping a critical attitude and an ecological, social and humanitarian engagement.

From an educational aspect, a primary goal in our research has been to facilitate teenagers practice programming and interaction with microcontrollers and wearables. Through this process, students should realize that different fields and disciplines, both scientific and artistic, can contribute to exchanges, interdependence and collaboration in a democratic environment of equal opportunities for everyone. This collaborative, critical and creative way of personal development might help a "critical mass" of people get involved with the public sphere.

In the context of art theory, concepts such as presence, embodiment or tangibility are at the core of reflection and have a great impact to post-digital artists.

As for our artistic practice, we incorporated into traditional and "tangible" arts, such as painting on paper and origami, digital sensors capable to measure the interaction of the artwork with the environment and enriched it with an additional creative dimension by "translating" this information to sound art.

As a next step we could find creative ways of using the IoT either in arts or in educational projects, such as an interactive, transmedia narrative.

Method

From participatory culture and "maker" movement, as well as DIY / DIWO (Do It With Others) / DIT (Do It Together) trends, emerged STEAM (Science + Technology + Engineering + Art+ Mathematics) education. More people try to be creative by using new technological means either in independent "maker spaces" or institutions, such as schools, museums, galleries, etc.

Through playful and collaborative project- based learning (PBL), students can have a positive experience that they can build on in the future.

Narrative is thought to be a privileged way of involving people in creative, collective, interactive, and often therapeutic processes. In the context of interactive and transmedia storytelling, artistic creativity may be supported by digital technologies, such as sensors, actuators or microcontrollers embedded in tangible, physical objects as wearables.

Educational material in an e-book format was created for a STEAM education workshop that was implemented at Corfu "Agros" high school, the results of which were evaluated through questionnaires.

We finally came to the idea of a mobile installation that would "provoke" sounds. "Origami singing" consists of two variants made of painted watercolor paper and was presented at Corfu (spring 2018) and Rethymnon (autumn 2018) art festivals.

A BBC micro:bit microcontroller has been attached to the body of each work and checks on the motion and directional / orientation changes by collecting data from the accelerometer and the magnetometer, and in particular the "bearing", the deviation (measured clockwise and in degrees) that the sensor records from the direction of the magnetic north.

In the first version of the project, these values are associated with excerpts from melodies or notes and frequencies. At the same time, a sort of animation appears on the LED screen of the microbit. The sounds are output from speakers connected to the microcontroller.

In the second version, sensor information is transmitted wirelessly, via Bluetooth technology, to a Raspberry Pi computer and is mapped to audio changes, as this information is used for audio synthesis and algorithmic composition, by the SuperCollider platform. A changing musical motif is reproduced by speakers connected to the RPI, depending on the Origami movement.

Conclusion

In the art and education context, interactive technologies such as sensors, microcontrollers, wearables, as well as the IoT, may support people develop their creative potential and emphatically participate in cultural exchanges.

ABSTRACT

Andreas Kalogeras

Primary and Secondary Education of the Ionian Islands, Epirus and Western Macedonia

Music, Technology and Education: A Theoretical Study, an Empirical Account and an Educational Proposal

- 1) Challenges created by the use (and ground-breaking capabilities) of new technologies and digital media in music education.
- 2) New applications for music teaching creation and production and how they can transform our music-education environment.
- 3) What is the overall picture of modern Information & Communication Technology (ICT) music-application exploitation in the present-day music-education map of Greece.
- 4) Good-practice examples from abroad and their results.

Abstract: The role of Technology in music teaching and learning is an on-going debate that needs to be finally resolved for the benefit of both students and music itself. In this paper, we will critically examine the use of modern digital technologies and revolutionary human-computer interaction schemes (HCI) such as the KINECT interface, including smart phones, tablets, P2P networks, Web 2.0 tools, PC's and even newly built teaching-oriented applications, and how they can completely revolutionize music education, music-teaching practices. We will conclude measuring their educational results.

Learning with collaborative Web 2.0 tools and age-sensitive scenarios, while bringing a new multidisciplinary to our classrooms will help release our educational system from the Theoretical Load and Historicism (which persistently remain the pillars of our educational tendencies) and bring a new multidisciplinary concept to our educational system.

The following table of Recommendations by the International Society for Technology in Education (1998), clearly depicts the objectives of this study, as well as our intentions to liberate our educational system from its century-long prejudices and help it enrich its toolbox with the latest in theoretical educational developments, as well as technological advances.

Traditional
Teacher Centered Instruction
Single Sense Stimulation
Single Path Progression
Single Media
Isolated Work
Information Delivery
Passive Learning
Factual, Knowledge-based
Reactive Response

New Learning Environments
Student Centered Learning
Multisensory Stimulation
Multipath Progression
Multimedia
Collaborative Work
Information Exchange
Active/Exploratory/Inquiry-based Learning
Critical Thinking and Informed Decision Making
Proactive Planned Action

Concluding this paper some necessary examples of good practice are presented, which will give us a clear picture of the ideology, the design, the use and the results attained by the advanced and student-centered Music-teaching methods furnished by the unhindered (but well planned) use of interdisciplinary new technologies.

Keywords: Music Education, Technology, Multidisciplinary teaching approach.

ABSTRACT

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Preliminary research on the design of a platform for developing educational applications focused in cultural heritage tourism with the use of augmented reality, mixed reality and gamification

Summary

A preliminary research is presented about an innovative digital platform for the development of educational applications focused in cultural heritage tourism with the use of augmented reality, mixed reality and gamification, applied to the excavation of the archaeological site of Amykles (an important political and religious center of Sparta).

Introduction

The main goal of this research is to transfer the experiential learning experience of the excavation of an archaeological site exploiting Augmented and Mixed Reality through a focused educational methodology to students and "cultural" tourists. Dynamic Applications will be created and managed by a central documentation platform in a three-dimensional environment that will have the following two subsystems: a) a mixed reality training modules development subsystem b) an educational narrative subsystem utilizing augmented reality and gamification.

Theoretical Framework,

The holistic approach of the platform combines studies about interactive narrative through augmented reality (Shilkrot, Montfort and Maes, 2014);(Viana and Nakamura, 2014)), the prospect of creating fun experience with AR (Yovcheva et al., 2014), the self-determination of the user of the applications via gamification (Hammady, Ma and Temple, 2016), and through new realities to participate in active participation and learning processes ((Dunleavy and Dede, 2014);(Bacca et al., 2015);(Ellenberger, 2017)), the creation of scenarios – histories and rich material for the enhancing of the user's experiential learning ((Matsuo, 2015);(Huang, 2017)) and the logic of creating alternative narratives in case the user chooses it ((Mott, 2006); (Riedl, Saretto and Young, 2004)). There are studies that cover parts of the suggested framework, e.g. the Holomuse ((Pollalis et al., 2017)) that offers a complete experience interaction with museum exhibits through MR Headset. The current study approaches the creation of applications of educational cultural tourism which use mixed reality techniques, augmented reality and gamification, through an integrated 3d content management system that uses new realities (AR, MR) and gamification, and utilize the excavation findings and their documentation structure.

Methodology

A case study approach will be used in the sanctuary of Apollon Amyklaios, the remains of which have been located at a distance of 5 km south of Sparta on the hill of Agia Kyriaki, and specifically in the monumental Throne of Apollo, that can be undoubtedly considered the most impressive and yet enigmatic architectural monument of the end of the archaic period, as attested by various distinguished scholars since the late 19th century. According to written sources (e.g. Polybius 5.19.3) the Sanctuary constituted the cult's most important centre of the Lacedaemonians. (Vlizon, 2012); (Vlizon, 2017))

The archaeologists of the excavation of the archaeological site of Amyklaion participating in the research team, will test a new approach to the study and the offer of focused education in the field of excavation giving them the opportunity with the use of appropriate mixed-reality optical media (e.g. Microsoft HoloLens) to navigate the real space with capabilities of visualization of virtual restorations in the real space, visualization of findings at the point found accompanied with their documentation, simulation in the real space of ritual and other functions of the monument for better understanding of the space and the conditions of its use. This experience will not only be limited to the user of the mixed reality headset, but the visual result and the voice of the instructor will also be live streamed, with the aim of reaching a large number of internet users (Archaeologists, students, etc.)

The archaeological site of the excavation will be digitized in 3d with photorealistic textures with the use of terrestrial photographs and unmanned aircraft systems (drones) at regular intervals (per level of excavation – excavation layers) during the excavation and the generated 3d model will be imported into the integrated 3d content management system. The above descriptive and three-dimensional information stored, course and excavation reports for archaeological site will constitute the basic material for the development of digital applications (apps) for students and "excavation" tourism. These digital virtual excavation (apps) will be evaluated in the site of the monument and will have the form of narration with game elements utilizing augmented reality and positioning technologies (GPS and beacons)

The research study is conducting as part of the "AMREP - Augmented - Mixed Reality Educational Platform" (<https://amrep.eu/en/>) research project of the Single RTDI State Aid Action "RESEARCH - CREATE - INNOVATE", partly funded by the Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK) and was started at the last quarter of 2018.

ABSTRACT

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Approaching “Weird Wave”. The use of theatrical form in contemporary Greek cinema and the use of these findings at “Teaching Technologies in Art Education” in Ionian University

Summary: This presentation will focus in a deep research in the use of theatrical techniques in the cinematic work of three directors, Yorgos Lanthimos, Alexandros Avranas and Athina Rachel Tsangari and the impact of this research to the prospective art teachers of the Pedagogical Training Programme (Certificate of Pedagogical and Teaching Competence) of Audio Visual Arts department of Ionian University in “Art Teaching and Creative Technologies” module.

Abstract: Contemporary Greek cinema from the dawn of Greek Weird Wave (Rose, 2011) with the film Dogtooth (2009) of Yorgos Lanthimos, opened a new chapter in the landscape of global cinema. Greek Weird Wave was linked with the Greek financial crises and it was connected with it not only through the topics of their narrations but with the ways of producing their films also. Even though it was never an official avant garde movement with common characteristics and manifesto (like dogma 95), Greek Weird Wave directors share a similar aesthetic in form and style. In mixture of absurdity and raw realism Greek Weird Wave maps a contemporary reality in Greece during the roughest years of the financial crises. Bradsaw states for Dogtooth that: ‘could be read as a superlative example of absurdist cinema, or possibly something entirely the reverse — a clinically, unsparingly intimate piece of psychological realism’ (Bradsaw,2010). Through the directors of Greek Weird Wave one can notice many differences in form and style, especially if we compare directors like Athina Rachel Tsangari and Yannis Economides. On the other hand, there are some very crucial similarities that run throughout most of the directors of the Wave. Metzidakis in his paper “No Bones to Pick with Lanthimos’s Film Dogtooth” talks extensively about four points in Dogtooth (curious language, evocation of cinematic and literary works, confusion of genre, and confusion of species) (Metzidakis, 2014). In the same time, it is also very noticeable in combination with the above four points an extensive use of theatrical form. This theatrical form is noticeable in two ways. The first one is through the approach of acting. This choice gives the creators the opportunity to underline this absurdity in their style. The second way is the use of long shots and the use of the cinematic space in their films. This is noticeable to most of the directors of the Wave from Yorgos Lanthimos to Alexandros Avranas and Argyris Papadimitropoulos. This theatrical approach to acting is used as a tool in the fourth point of Metzidakis, the confusion of species. As Metzidakis says: ‘This ultimately postmodern mixing of theatrical genres leads us to consider a fourth and final category of traits important to this film: those which problematize conventional scientific distinctions between human and animal species (Metzidakis, 2014). This presentation will focus in a deep research in the use of theatrical techniques in the cinematic work of three directors, Yorgos Lanthimos, Alexandros Avranas and Athina Rachel Tsangari. The findings of this research will be presented before the conference in the students of the Teaching and Pedagogical Training Programme in Art Teaching and Technology (Certificate of Pedagogical and Teaching Competence) of Audio Visual Arts department of Ionian University in “ Art Teaching and Creative Technologies” module. This module focuses on cinema and in the ways that this tool can be used in the teaching experience of

minor students. The opinion of the students and the impact in their teaching experience of this research will be used as a methodological tool for the conference presentation. We will produce some semi structure video interviews with the university students that will show the impact of this research to young future teachers. Film Studies and cinematic research can be a powerful tool for future art teachers in order to approach their students from a new and vibrant point of view.

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Iakovos is an award-winning Greek director, best known for his work *A Still Sunrise* (2017) and *Flickering Souls Set Alight* (2019).

Iakovos' pioneering work is a combination of practical filmmaking and academic research. His goal is to narrow the gap between the two.

His major project so far, *Flickering Souls Set Alight*, is the cinematographic depiction of his research on ALS (Amyotrophic Lateral Sclerosis).

Iakovos' first degree in Audio Visual Arts at the Ionian University, was followed by an MA in Cinematography at Bournemouth University. At the moment, he is completing his PhD on the work of Theo Angelopoulos at the University of Central Lancashire.

He is an active researcher, counting numerous international publications. He is an official researcher in StoryLab Film Development Research Network.

Agnes Papadopoulou, Assistant Professor in the Department of Audio & Visual Arts at the Ionian University of Greece. Her scientific interests include Art Didactics, Art and Technology in Education, Neuroaesthetics, Philosophy and the Aesthetics of Media, Digital Arts, Cinema Studies, Performance and Technology. She has been involved in many projects in Primary and Secondary Schools in Greece. Her publications in both conference proceedings and journals are related to the teaching of art and creative technologies, the role of the arts as a means of effective learning and the activation of critical thinking. Her writings include two books and a theatrical play. She has also been involved in book editing. She has directed many theatrical performances, contemporary and new play.

Session 5: Digital Culture and Education II

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5.6	Promoting cultural heritage via gamification and augmented reality	Marios Magioladitis, Dimitrios Riggas, Eleni Christopoulou

ABSTRACT

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Interactive learning games: the importance of art-based production methodologies and aesthetics for the development of innovative content

Summary

In recent years, Game Based Learning has assumed a significant place in education debate, although games are not a new field in pedagogical research. Educational technology and Digital Game Based Learning are increasingly gaining ground in schools. Our research focuses on this aspect of learning interactivity relating to game content development.

Objective

Digital Game Based Learning is an innovative form of interactive content. This work presents the mechanics of interactive and gamified content development in contrast to traditional media production workflows. The role of interactivity in digital educational games renews interest in learning theories and their impact on understanding computer interactivity and enhancing the learning process. Learning theories provide the basic pedagogical principles that should be taken into account by interactive digital game designers. The synthesis of these theories proposes four dimensions of interactivity that we need to keep in mind: learner (i.e. the "who" of the learning process), content (i.e. the "what" of the learning process), pedagogy (i.e. the "how" of the learning process), and context (i.e. the "when" and "where" of the learning process). Within this framework, our research team designs and develops digital learning content from the real life scenarios employing art-based production methodologies. Our ongoing project is an interactive simulation game called "Waking-up in the Morning" addressed to typically developing preschoolers and children with learning difficulties of similar mental age. The main goal is to give an alternative way to cultivate important skills in the domain of Activities of Daily Living as people with developmental disorders often have difficulties while performing tasks in their daily living. The project is based on the conviction that everyone can learn according to his/her interests, personal characteristics and pace in an adaptive and personalized interactive environment.

Method

Digital learning content comes in many forms including interactive tutorials, games and simulations, e-assessments, streaming media, web pages, digital writing and presentations, pod-casts, screen-casts, videos, slideshows, quizzes, etc. Our interactive simulation game is integrated into a wider range of skill learning options through transmedia learning activities, which are sharing the same content. Our work is strongly related to the game development phases mixed with art-based production methodologies: concept, pre-production phase, production, alpha-phase, beta-phase and post-production. To ensure natural representation and better transfer of skills to real-world conditions, we chose 3600 video technology. The produced digital material is utilized both in a virtual reality learning environment (VRLE) as well as in an augmented reality learning environment enriched with communication cards. VR-enabled

headsets, laptops, tablets, smartphones or interactive whiteboards will be used, depending on the player-learner's profile/characteristics. As the game was designed to receive content from the real world, the steps for its development were parallel to the design and development of 3600 videos with shared elements. The following stages describe the VRLE Game Development Life Cycle (GDLC):

1. Concept/Design:

- the idea originated from the ascertainment that the degree of child independence in Activities of Daily Living (ADLs) is crucial for parents, caregivers, educators and therapists
- target group, game's genre, learning theories approaches, technology and hardware platforms, gameplay de-scription and mechanics, i.e. the steps a player takes to achieve the goals of the game and fi-nally the schedule

2. Development

Pre-production:

- scripting
- storyboard
- shoot location, repérage and découpage
- shotlist - breakdown
- casting
- props
- game design documentation: flowchart and gameplay elements
- prototype

Production:

- shooting
- coding, programming and software development

Post-Production (post-production of the 3600 videos is integrated in the production of the game)

- montage
- voiceover
- sound design

Alpha phase: internal testing methods with criteria on each prototype stage

Beta phase: testing cycle conducted by third parties (user and expert evaluation)

Post-Production (game): release to public and game package

Conclusion

In order to design and develop an interactive learning game that delivers content from the real world and at the same time affords image fidelity to ensure natural representation it is necessary to take into account both the methodologies for design and development of video games as well as the produc-tion process of a 3600 video. In conclusion, pre-production (scripting/storyboard, etc.) occurs before and during the Alpha

phase of game development, production during Alpha phase and post-production before and during Beta phase of game development. This mixed video and game production leads us to a complex model of game development that showcases the importance of art-based production methodologies and aesthetics for the development of innovative game content.

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ABSTRACT

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You have the tablet, I have the cards, let's play together! Combining card-based games, puzzles, multimedia applications and learning content that support inclusive education scenarios

Summary

Working with students with difficulties is challenging because even though they share common features according to their diagnosis, most of them need individual approaches. Regarding to inclusive education, we design and develop applications in order to facilitate teachers to overcome the barriers they meet in the implement of "a school for all".

Objective

Nowadays, the design and the development of educational material for teaching activities addressing the needs of students with different learning profiles is a necessity due to the diversity of population in most classrooms. Educational settings premise equality and equity by providing the same learning opportunities. In such settings, equity of opportunity becomes a reality only when students receive instruction adapted to their readiness levels, interests and learning preferences. The case of students with special educational needs is challenging because even though they share common features according to their diagnosis, most of them need individual approaches. Regarding to inclusive education, the cornerstone of which is a school without exclusions and segregations, teaching methods become more complex as each student, with or without disabilities has his own personal pace. Personalized learning inspires teachers to design ways to approach students individually, adjusting to a particular learner's interests, goals, focus, progress and problems following the principles of differentiated instruction. Generally, teachers state that they want to differentiate the content of their courses but they do not have the right equipment or know-how. Even when they can use technology, they declare it is a costly process in both time and money. Recently, smart education provides the guidelines to overcome these problems because it is based on technologies and devices that are available to anyone, anytime and anywhere. In our recent research on the attitudes towards the use of digital games for collaborative learning in schools, 99.2% of the 264 undergraduate students and future teachers of various scientific background responded that they have a personal computer or a laptop and 96.2% smart phone or tablet. Additionally, cutting-edge technology emerge the creativity of both teachers and students. Focusing on the possibilities that technology provides to special and inclusive education, we create content familiar to students. Our work in this paper is part of a larger project that is purpose is to give teachers alternative ways of teaching through transmedia learning with content from everyday life of children, in our case Activities of Daily Live Skills (ADLs). By utilizing paper cards, which are a classic way of communicating children with developmental difficulties, we develop augmented reality (AR) applications with gamification techniques using mobile devices such as tablets and smartphones.

Method

In order to create the AR application we followed concrete steps:

Initially, we chose these parts from the material created to produce all of the applications of the project "Waking up in the morning": pictures for triggers, videos for overlays and gamification.

For the pictures, we secured license by the company that designed them. We deliberately chose ready-made pictures and we did not design ours, because these pictures are readily recognizable by children with educational needs as many special educators and therapists use them. Additionally, the usability and availability of the images were taken into account as this will also affect the availability of our application in order to somebody easily follows the channel that hosts the application. Furthermore, considering researches about the effect of the amount of physical detail in pictures on picture recognition memory, we chose simple pictures, focusing on the lower cognitive load and on the avoidance of disruptions. (++++ απλή θέλει και τεχνολογία) ξηγκξηκ

For the videos, we have made the appropriate converts and processing to be compatible with the augmented reality. The videos have been selected from a series of videos, those that integrate morning routine learning content, e.g. brushing teeth, so that they can function independently. If children are not yet able to make these card combinations to create a story then they can see the content of the video and thus benefit from the whole process.

Under gamification, in order to provide a complete sense of game experience, users need to follow a specific process by placing the pictures in the appropriate order on a board. When cards are placed in the right order, their unique combination acts as a trigger for the emerging of the suitable video. If the cards are not placed in the right order, then a pedagogical agent appears to urge students to try again.

Conclusion

According to the literature, AR gives motivation, engagement, perceived enjoyment and collaboration among learners and can provide the benefits of an effective and engaging learning experience. Our research team is working to give teachers the expertise to approach any content through easy AR reality applications that they will design and develop with their students. Our expectation is to show that they can overcome the obstacles they face both for the differentiation of their educational material and for the implementation of inclusive education exploiting the possibilities of technology.

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Karakoutis Stavros is a student at Department of Audiovisual Arts of the Ionian University, in Corfu, Greece. Currently he is learning programming in several languages and the overall computer graphics pipeline. In addition, he is working on several university projects about sound, web development, 3d graphics, video game creation, a personal game engine in Java and an android Augmented Reality app for utilize in inclusive education. Mainly he plans to work on the video game industry either on a professional studio or with his own small team.

Vaggelis Pandis, is a student at the Audio and Visual Arts Department of the Ionian University in Corfu, Greece since 2014. He holds a Certificate of lower in English and is an active freelancer as a sound designer and composer (member of HEMCA since 2019). Also he has taken up some graphic design commissions for companies in Corfu town. He used to work as a concert stage technician for the Seven arts venue inc. - Corfu. Also he has been a volunteer in the "Be there Corfu animation festival" as a photographer. Additionally he was a part of the organizing team for the last two editions of the festival. He is currently a member of the team managing the Ionian academy events and conferences stage as a sound and light technician. Finally he was a production assistant for the upcoming animation film "The sea tranced ilse" by Efi Papa and a sound editor for the audio description of the animation film "My stuffed granny", of the same director, as a part of a masters degree research in the Department of Foreign Languages, Translation and Interpreting of Ionian university.

George Miliotis is a Special Technical Personnel at the department of Audiovisual Arts of the Ionian University in Corfu, Greece. He holds a MSc in Computer graphics & Visualization and a BSc in Computer Science. His experience includes software development for both the desktop and the web in commercial and academic environments as well as teaching in primary and higher education. His interests include interactive storytelling & VR/AR, computer graphics & visualization, systems administration, systems analysis and software development.

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ABSTRACT

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Undergraduate students' attitudes towards collaborative digital learning games

Summary

The use of digital games for educational purposes is constantly increasing. The teacher is considered as fundamental factor in the successful implementation of digital games into the classroom. Our re-search aims to explore undergraduate students' attitudes as future teachers for the exploitation of collaborative digital games in the learning process.

Objective

Digital educational games are powerful learning tools and are part of the overall educational technology. Digital games, among others, cultivate skills such as critical thinking, problem solving, collaboration, communication, creativity and information seeking. Digital games allow teachers and students to connect scenarios through the real world with school content, thus responding to the old question "Why should I know this?" What are undergraduate students' attitudes and perceptions, however, who are preparing to become teachers for the use of collaborative digital games in the learning process?

Method

The main aim of this study is to examine undergraduate students' perception who are preparing to be teachers towards digital educational games and its implementation into classroom, and especially digital educational games which are designed for collaborative learning. Following, we describe the online based survey questionnaire we employed, the participants and our data collection process. The data collected is analyzed both qualitatively and quantitatively.

Participants and duration of the survey. The undergraduate students of the target group were 264 students from twenty five University Departments in Greece. The subject of their studies relates to courses of the curricula of Primary and Secondary education. The research also included students from Departments of Special Education. An invitation was posted to the Facebook students groups these twenty five departments maintain and addressed to anyone interested to participate in the survey. They were informed that the survey will be conducted on a voluntary basis and that consent to participate will be deemed to have been given by completing the online questionnaire. The participants were also informed that the researchers committed to keep their anonymity. The questionnaire was available for a period of about one month and half, from the beginning of February to the mid of March 2019.

Questionnaire Survey. The survey instrument contained three sections. In the first section, participants were required to answer questions about their demographic details, as department, gender, age, training in ICT, game playing experience and issues about special education as interactions with a person with a disability, training level for teaching students with special educational needs and/or disabilities, legislation,

teaching self-efficacy and teaching experience. The questions in the second section of the questionnaire were about participants' attitudes towards digital educational games and their opinion on how useful could be the games or not in the context of collaborative learning. The questions in these two sections were multiple-choice questions and participants were simply selecting the answer that fitted to them. The questions related to attitudes were multiple choice of thirty-three statements and the participants were asked to indicate their agreement to them in a five-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). At the end of the questionnaire (third section), participants were given the opportunity, if they wanted, to provide an additional comment as an open-ended question: "What do you think is the biggest obstacle to integrating digital games into the learning process?" The results provided a basic understanding of the undergraduate students' attitudes and opinions about exploiting collaborative digital learning games.

Conclusion

The notion that prevails is that young generations have more positive attitudes towards digital games. Our research suggests that the understanding about the attitudes of future teachers of two educational levels, Primary and Secondary Education, is fundamental as in some years almost the majority of teachers will use digital learning materials. This evidence is very important for the educational system of higher education level which prepares the future teachers and should be under consideration for educational policy-making.

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ABSTRACT

Zoi Karageorgiou, Eirini Mavrommati,

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Hellenic Open University | Ionian University, Greece

Escape Room as learning environment: combining technology, theater and creative writing in education

This study concerns the structure for creating an innovative learning environment, using escape room theory, technology tools, multimedia learning principles, creative writing and theater tools in education. Students manage to have an enjoyable experience and through designing, problem solving, playing and more, their learning turns out to be an adventure.

The main goal of this paper is to demonstrate how a technical education institution can combine activities that relate to the school curriculum, with activities that relate to "School Action Plans" (role playing, analyzing roles, working cooperatively, creating visual representations of writings, gamefications, animation, robotics, programming, cooking, installation of electrical equipment etc.), in order to convert a school hall into an escape room.

More specifically it presents an Action Plan that was implemented in a Vocational school of Greece, with four main Sectors and five Specialties. Most of the students didn't have previous contact or knowledge about escape rooms. The basic idea was that pupils of the 1st Classes of Lyceum should cooperate with teachers and students of the Specialties to acquire collaborative knowledge and skills, motivations and goals. The project was founded from Noesis Science Center after submitting a Technical Bulletin, Timetable and the Budget. "School Action Plans" are part of a subsidized national program called "New beginning at EPAL". They aim to develop pupils' personality, sociality, communication skills and cooperation among teachers. School extroversion actions are enhanced and they offer to students opportunities to develop their self-esteem and experience success. At the same time practice, includes the experiential part of knowledge which avoids conventional communication by textual or verbal means. Many researchers in the creative disciplines have used creative practice, in order to achieve the inclusion of tacit knowledge that is gained.

Technology and multimedia provides students with "invisible" support for their developments and empowered them to use their domain specific know-how to shape the IT tools to better support them in their daily practices. Augmented computer capabilities and extensive use of them in learning have resulted in the immense development of multimedia instructions in education.

Meaningful learning was important for this research. It helped student attend to important aspects of the presented material, mentally organize it into a coherent cognitive structure, and integrate it with relevant existing knowledge.

Dramatization at school, cultivated creative thinking, cognitive and meta-cognitive skills, since students made assumptions, identified, improvised and evaluated dramatic situations. There has been a collaboration with a theatrical group and a volunteer actor, who helped students involve in dialogues, control the information and look for logical reasoning. Through critical thinking they could deal with problems and multiple fantastic situations and conditions. Creative writing was important too, since during composing, students understood much more about the social event that they were in the process of accomplishing.

The use of games or play can enable students to generate many ideas in a free and spontaneous way, which is very important in establishing a culture of creativity among a student cohort. In order to succeed it requires active creators of knowledge. Live-action games are cooperate games, ideal for classrooms, that can take advantage of the physical space in which classrooms are set. They bring the players in face-to-face contact with each other and immerses them directly into the game world, which is the physical world the players inhabit. Working together on a game designed around specific learning outcomes sets the groundwork for active learning and social constructivism. Escape rooms are live-action team-based games where players discover clues, solve puzzles and accomplish tasks in one or more rooms, in a limited amount of time trying to accomplish a specific goal (usually escape from the room). Their contents must be kept a secret, so it's difficult to find resources publicly available to help those wanting to start or improve an escape room.

The methodology that was used to collect data and work over the course was research through printed and digital material, direct and participatory observation, interviews, triangulation (combination of interview and observation), questionnaires, diaries, recordings, sociogram, experiments, focus groups, demonstration and presentation.

This study demonstrates the way that students can be motivated to acquire the appropriate knowledge and experience to get to know and understand the entertainment market of today. School, meeting its goals, provides innovative ideas, reclaims modernized tools and trains skills, in order its graduates to become creative citizens, with multiple capabilities in a sustainable and competitive society. Finally, the methodology of creating an escape room in the class could be spread and hopefully used from anyone interested in.

ABSTRACT

Eva Kekou

AICA HELLAS

back to the future: creating new u topias

This study concerns the structure for creating an innovative learning environment, using escape room theory, technology tools, multimedia learning principles, creative writing and theater tools in education. Students manage to have an enjoyable experience and through designing, problem solving, playing and more, their learning turns out to be an adventure. The main goal of this paper is to demonstrate how a technical education institution can combine activities that relate to the school curriculum, with activities that relate to "School Action Plans" (role playing, analyzing roles, working cooperatively, creating visual representations of writings, gamefictions, animation, robotics, programming, cooking, installation of electrical equipment etc.), in order to convert a school hall into an escape room. More specifically it presents an Action Plan that was implemented in a Vocational school of Greece, with four main Sectors and five Specialties. Most of the students didn't have previous contact or knowledge about escape rooms. The basic idea was that pupils of the 1st Classes of Lyceum should cooperate with teachers and students of the Specialties to acquire collaborative knowledge and skills, motivations and goals. The project was founded from Noesis Science Center after submitting a Technical Bulletin, Timetable and the Budget. "School Action Plans" are part of a subsidized national program called "New beginning at EPAL". They aim to develop pupils' personality, sociality, communication skills and cooperation among teachers. School extroversion actions are enhanced and they offer to students opportunities to develop their self-esteem and experience success. At the same time practice, includes the experiential part of knowledge which avoids conventional communication by textual or verbal means. Many researchers in the creative disciplines have used creative practice, in order to achieve the inclusion of tacit knowledge that is gained. Technology and multimedia provides students with "invisible" support for their developments and empowered them to use their domain specific know-how to shape the IT tools to better support them in their daily practices. Augmented computer capabilities and extensive use of them in learning have resulted in the immense development of multimedia instructions in education. Meaningful learning was important for this research. It helped student attend to important aspects of the presented material, mentally organize it into a coherent cognitive structure, and integrate it with relevant existing knowledge.

Dr Eva Kekou is a cultural theorist, art historian and curator. Her field of expertise is art, science and technology. Her research interest is focused around interdisciplnarity in the arts, media art and audience response in new collaborative art practises. Furthermore she is interested in art in public space and locative media. She works as a freelance curator and among others she has organised the symposium Urban Digital Narratives at the National Research Foundation (2012) and the symposium Glob-art perspectives in Munich (2014). She has also organised the new media exhibition Point Zero: Restart with works of Maurice Benayoun, Roy Ascott and Scott Kildal at the Union of Greek Archeologists (2016). This has been the first new media exhibition in Greece showing work of reputable artists to the athenean public. Her work is presented worldwide and published in conference proceedings (International Symposium of electronic art, media art histories, subtle technologies, siggraph et al.). She has given a number of lectures at museums around Greece (Museum Terriade, Goun-aropoulos Museum) and Syracuse University in Florence among others. Eva Kekou has taught at the University of the Aegean. She lived in Austria, United Kingdom, United States, Luxembourg, Germany and Italy. She is based in Arhens where she works as a freelance curator, independent writer, researcher and educator.

ABSTRACT

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Eleni Christopoulou
Ionian University, Greece

Promoting cultural heritage via gamification and augmented reality

The paper presents a methodology that we propose which aims to motivate learners to become actively engaged in researching their cultural heritage and exploring local history, monuments and pieces of art via their engagement in playful yet educational activities. The proposed methodology has been applied and evaluated in diverse educational environments and settings.

Numerous past research has demonstrated that students engage themselves more actively in learning activities when these involve socialising, discovering and teamwork. Current trends in technology enhanced learning explore how learning can be achieved outside the classroom, in informal settings, leveraging spontaneous interactions, interacting with locals and collecting their local knowledge. In addition to that, research examines how latest technology can enable novel interactions among both people and people and the urban landscape.

The participants in our research participated actively; they traversed the selected urban landscape, selected points of particular interest and then retrieved information from various open sources, like Wikipedia and its sister projects. Then participants designed a game, using techniques that exploit cloud-based platforms and the application of augmented reality, aiming to blend digital content and physical landscape. In this paper two distinct applications of our methodology are presented; in the first one the group consisted of University students and in the second of adult learners.

The first implementation was carried out at Corfu Tech Lab as part of a workshop series called "Girls Just Wanna Hack" aiming to enhance the IT skills of young female University students. The meetings were at the National Historic Library of Corfu. Approximately 10 females participated in the project. The students implemented a treasure hunt. The program was supported by the Public Affairs office of the U.S. Embassy of Athens.

The second implementation was at Second Chance School of Corfu where adult learners who haven't completed secondary education participated in a school project under the guidance of an informatics teacher and a mathematician.

We evaluated the learning process via questionnaires. In both implementations the participants gave positive feedback on both the process and the learning outcome. The participants felt more confident on their coding skills, had better understanding of the IT terminology and tools involved and reported they gained an enhanced understanding of their hometown.

Session 6: Cultural Facets - Augmented Reality in Art

6.1	The poetics of space in virtual reality - A critical analysis and approaches of spatial perception in 3D audio	Aleksandar Vejnovic
6.2	Augmented objects interacting with social media activity	Caterina Antonopoulou
6.3	Exploring Nonrepresentational Iconography and Opportunistic Interaction in the Design of Virtual Reality Experiences	Nikitas M. Sgouros
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6.5	Soundwalking and archiving, Convergences and tensions	Angeliki Poulou
6.6	Four Sons of Space. with an armor on or without. Matters of space and the image in art {and design} practice. The two dimensional and the three dimensional, the screen and the canvas in the post-digital era	Maria- Elisavet Kampi

ABSTRACT

Aleksandar Vejnovic

Darmstadt UAS, Germany

The poetics of space in virtual reality - A critical analysis and approaches of spatial perception in 3D audio

This topic contributes to a discourse about space in 3D audio productions from a critical point of view. Although the term 3D audio is already used for marketing purposes just as the term Immersion for overwhelming functions with the unusual drive to depict and project reality, 3D audio and other VR-technologies open an important way of facilitating aspects understanding media as environments. Furthermore, the generalization of those terms consequently masks and signifies the oblivion of the rich culture-historical milestones of experimental play with signifier and signified in literature and other media forms. The consideration of space is inseparable when working with 3D audio. However, observations have shown that space is often taken for granted, by using it merely as a container in which sounds are geometrically placed. As space has a long history with diverse theories, the focus of this lecture is to present a way of thinking by turning the calculated space, which is known as virtual space, into an aesthetic space with a conceptual idea. By this, the space is no longer a given element, but constructed by the consciousness of the recipient. Because of the subject's complexity, the leading question in the frame of this conference will be: How can space as a concept contribute to the awareness of listening and enhance the intensity of being-in the acoustic environment? The conceptual aspect allows a reformulation of listening perception and meaning of sounds. The deconstructive space is a conceptual thought that opens a wide range of possibilities for interpretation in 3D soundscape compositions. It stands for a space of reflection instead of an imitation of reality. Moreover, the listener is invited to question the meaning of sounds in their spatial relation, independently of language and empirical evidences that constitutes a seemingly reality and truth. To conclude, the involvement of space with its aesthetic and artistic ideas opens a discourse concerning facilitation of socio-cultural aspects within digital media technology. Art has a crucial position here. It deals with the medium itself from a critical point of view, but also finds new design principles and ways of perception and expression. Although the understanding of space is still postulated in a cartesian thought, Marshall McLuhan, Gaston Bachelard and R. Murray Schafer had shown that space is a cultural implication and a philosophical-existential part of the human being, so is Virtual Reality.

Aleksandar Vejnovic is a 28 years old sound artist, acoustic and media ecologist and lecturer, who is currently based in Darmstadt, Germany. Since 2014 Vejnovic is researching at the Soundscape- & Environmental Media Lab at Darmstadt UAS in the fields of 3D Audio, acoustic ecology and media aesthetics. In addition he runs lectures in media philosophy and courses for the Master's program International Media Cultural Work with the focus on intercultural audience development and media art facilitation. Vejnovic works also with elementary and secondary schools where he conceptualizes media art projects for children who have different social backgrounds.

ABSTRACT

Caterina Antonopoulou

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Augmented objects interacting with social media activity

The paper discusses issues related to the technological mediation of communication, through the presentation of the data-driven media art installations Social Things. Social Things are augmented artifacts that interact with data received from social media platforms and dynamically change parameters of their functionality or appearance according to the received information.

Social Things are common objects with embedded sensing, actuating, processing, and networking capabilities. Although they function as smart objects of the Internet of Things, they approach the notion of smartness, in a critical way. Conventional smart objects are designed to comply with the desires of their users and conceal, underneath their transparent interface, the unpleasant conventions that their use implies (privacy issues, dataveillance, agreement with abusive terms of use). In contrary, Social Things reveal these conventions and the inconsistency between users' digital and physical lives.

The Social Things series currently consists of two artworks. Both installations use custom electronic circuits containing an open hardware microprocessor with internet connectivity, actuators or led lights and LCD displays. They also use custom opensource software that retrieves and processes the data flow of social media platforms, detects certain information and controls the output of the installation in real time according to this information.

The first project of the series is the installation Inflated Ego. It consists of a common balloon augmented by an actuator (air pump) which is controlled by custom electronic circuit and software. It reflects on the divergence between the digital and physical identities of social media users. In the digital world, a 'like' rewards the ceaseless effort to promote a carefully curated view of the self, reduces embodied social interaction, provides an alibi for the users' passiveness, contributes to the promotion of illustrated digital lives. The project maps the value of a digital 'like' to the physical world: a small amount of air is pumped into the Inflated Ego balloon every time a social media user likes the Facebook page of the virtual public figure SoThi. SoThi is a plural identity and her page is edited by multiple editors. Every post of the page is the result of internet searches of generic keywords in databases of Public Domain images and famous quotes.

The second project of the series is the installation #freePrometheus. It consists of a D.I.Y. lamp made of plexiglass tubes and led stripes controlled by custom electronic circuit and software. It reflects on the dataveillance of digital information by authorities. The project transfers the figure of Prometheus Bound to the current hybrid reality of continuous internet connectivity and restless social media presence. Under this context, a campaign in favor of the political prisoner Prometheus appears on social media with the distinctive hashtag #freePrometheus. However, the data flow is surveilled and controlled by an algorithm, that uses this information against Prometheus, gradually destroying the gift that he offered to humanity: the fire. The algorithm receives and processes data from the social media platform Twitter. Whenever it detects a new tweet tagged with the hashtag #freePrometheus, the light of the lamp fades out. The light simulates the fire and the plexiglass tubes simulate the plant narthex, where Prometheus hid the fire when he stole it from Hephaestus, according to the myth.

The paper will provide a detailed technical description of the installations and will discuss the theoretical background of each artwork. The presentation of these case studies aims at contributing to the discussion on the impact of technology on communication and social interaction. It also aims at addressing the notion of the Internet of Things in a critical way, drawing attention on its social consequences, which are often disregarded by IoT users in the name of seamless performance, usability, and convenience.

Caterina Antonopoulou is an engineer, media artist, and researcher. She has been a lecturer of interactive arts (ASFA, NTUA, e.t.c.), a co-founder of the artistic collective 'Once Upon A Byte' and a co-curator of the 11th & 12th Athens Digital Arts Festival. She currently pursues a PhD on media art at the University of the Aegean and she collaborates with the institute 'CTI Diophantus'. She has worked with numerous R&D labs and artistic groups. Caterina holds a master in Digital Arts (UPF, Barcelona 2009) and a diploma in Computer Engineering (NTUA, Athens 2006). Her work has been presented at international exhibitions & conferences. [<https://peqpez.net>]

ABSTRACT

Nikitas M. Sgouros

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Exploring Nonrepresentational Iconography and Opportunistic Interaction in the Design of Virtual Reality Experiences

Although virtual reality environments provide endless opportunities for novel kinesthetic experiences, many applications in this area restrict themselves to representational iconography and goal-directed activities (e.g., battles/fights, races, games, training simulations etc). The design of such representational environments is based on the development of models (objects or processes) that simulate to a degree the real world. Nonrepresentational iconography refers to the depiction of objects and spaces that do not resemble real objects. Opportunistic interaction refers to the embedding of the user in situations that present opportunities to act and explore a virtual environment rather than being subservient to specific goals imposed by the system. In nonrepresentational and opportunistic VR the lack of correspondence between kinesthetic and real-life experiences can be a mixed blessing. On the one hand, infinite design opportunities emerge as the analogs of real-world constraints can be ignored. On the other hand, this can lead to incomprehensible or alienating experiences. At the same time nonrepresentational design as a process is more complex due to the sparsity of tools and methods that can aid the designer in such systems.

This paper describes our experience with the development of two nonrepresentational mobile VR systems, Quaternion [2] and Atypical (to appear in the Google Play Store soon). Quaternion is a minimal game in which the user navigates a non-objective

space seeking to drive a set of spheres in a designated area in the presence of another distinct set of moving objects that can collide with and deflect the user-controlled spheres. The environment imposes no time limits and there is no scoring, thus allowing the user to freely explore a constantly varying non-objective visual backdrop, while listening to philosophical quotes from a computer-generated voice and improvisatory jazz samples. Atypical is a variation on the same visual theme as Quaternion differing in that the user position remains fixed and there is no game played. Instead the user can probe the environment by firing objects at desired directions. If these objects collide with other moving objects an improvised audio, video or textual effect is created.

Since there is no real-life analogs to base one's creative efforts, nonrepresentational VR design has to rework the basics of form, color, motion, rhythm and sound to this new medium. In this respect, it faces similar problems to those negotiated by early 20 th century abstract artists such as Kandinsky [3] or Mondrian [4]. In addition, we believe that the absence of real-life grounding of the experience motivates the user to actively construct meaning based on his personal experiences similar to what is the case in non-objective art [1]. Based on these observations, we strove for a completely stochastic and geometrical visual backdrop for our environments. This consists of a set of spheres and cubes that are continuously deformed and rotated with varying speeds. In addition each such surface is rendered using two rotating texture coordinate systems over which continuously deforming star and circle shapes with varying colors are mapped. Furthermore, the space is populated with rigid moving spheres with stable color patterns. These spheres offer interaction opportunities to the user. All moving objects use periodic functions in their transformation thus allowing the imposition of a desired rhythm in their behavior. Rhythm is also imposed by the use of a constant rhythmic

part (a drum/tabla loop in the case of Quaternion/Atypical) embellished with jazz samples for Quaternion or random piano or percussive samples notes for Atypical that are triggered by user actions in the environment. In both cases we impose no restrictions on the ways the user interacts with the environment. In Quaternion

the game is presented as an opportunity rather than a task, while in Atypical the user can choose whether to probe the environment or not. Consequently, she has total freedom to explore each environment at her leisure. Our preliminary trials indicate that users find this interaction pleasing and we have observed no adverse reactions (e.g., nausea) so far.

On a more practical level we envision the use of our systems as parallel supporting activities that can maintain engagement in a boring main task and enrich the overall experience. For example, we have tested using Quaternion or Atypical while exercising on a treadmill or indoor bicycle with very encouraging results.

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Nikitas M. Sgouros is a Professor at the Department of Digital Systems at the University of Piraeus, Greece. He is also the Director of the Media Technologies and Intelligent Systems (METIS) Lab at the same department. He holds a PhD in Computer Science from Northwestern University, USA (1994) a M.Sc. with distinction in Artificial Intelligence from the University of Edinburgh, UK (1990) and a Diploma in EECS from the National Technical University of Athens, Greece (1988). His main research centers on intelligent and experimental media systems, VR & AR, games, robotics and artificial intelligence.

ABSTRACT

Konstantinos Chorianopoulos

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Softwork: What are humans useful for?

In this article, we suggest that the use of software applications has already provided a perpetually robust solution to the problem of work, employment, and jobs. We assume that basic human needs (food, shelter, security) have been fulfilled and we aim to address self-actualization. For this purpose, we employ social phenomenology theory and we regard human actions and beliefs as a malleable inter-subjective reality. In particular, we focus on the genre of office productivity software and we provide a case study on Computer-Aided Design (CAD) software. We demonstrate how the work of the architect has gradually morphed from a skillful, embodied, and enacted activity into mere symbol manipulation that can be performed by unskilled humans. We suggest that this finding can be generalized to the majority of software applications that have a similar workflow, which includes editing of content and sharing it with other human beings, in a self-reinforcing cycle. These findings have significant implications for policy, education, and spirituality, which are malleable and could shape human needs in alignment with any goal that we consider as good.

Contemporary service work is increasingly based on software applications, which have created new kinds of work for users and many riches especially for programmers. Ironically enough, even if we choose to program, sooner or later we will probably end up to be programmed by the new software that we have created as a solution to the problems of the previous workflow. For example, the architecture of homes could be performed traditionally with continuous presence at the building site, which facilitates a physical enactment. Traditional architects would have to move their body at the building site multiple times during construction, in order to take measurements with bare hands, which was considered a job worth automating. Work automation is usually performed by a hybrid combination of electromechanical robots and software, but in the long term it boils down just to new software.

Contemporary architecture has employed computer-aided design software, which represents and manipulates symbolically a building or a construction site. In this way, architects have been seating on computer terminals with several devices, such as screens, keyboard, mouse, pen, tablet. Although CAD programs were once described as creative (McCullough 1998)[@mccullough1998abstracting], efficient and productivity enhancing, nowadays, which is less than thirty years after the introduction of CAD software, many practitioners refer to themselves, as CAD-monkeys, or other similar terms that do not seem to correlate with self-actualization. We suggest that CAD software is very creative at least for those who are close to the programming part, but it is not very creative for those who are just users (Rushkoff 2010)[@rushkoff2010program]. The ongoing trend towards increased automation through machine learning requires a significant amount of human work to classify basic notions and symbols on behalf of the computer. For example, an interior architect will have to classify thousand versions of similar objects, before the software is able to automatically recognize, measure, and model them in the CAD software.

In brief, the work of the architect seems to gradually morph from embodied and enacted expertise to increased generic symbol classification on a computer screen by someone who has the intelligence of a four years old child. At the same time, the new work practices might be even more dehumanizing than the CAD-monkey paradigm, for the users who train the system. The case-study of the architect job is hardly unique. The pilots of airplanes used to be short of heroes with skills that spanned electromechanical knowledge, navigation, but they have been gradually describing themselves as pilot-monkeys (Carr 2015) [@carr2015glass]. Although this analysis might point to the conclusion that there is a vicious circle, we might explain it as a mere reflection of the nature of software itself. Moreover, we can even regard this process as elegant, in a way that is similar to biological evolution.

The above analysis for CAD applies for a large number of similar office productivity applications, such as word processing, spreadsheets. Actually, it is the software development itself that is into a perpetual recursion. Thus, new software solves the problems of previous software, but creates new kind of opportunities for newer software in a self-reinforcing cycle. It is no wonder that any type of work that is based mostly on software (softwork) will also be subject to the same forces.

In the future, we might not need to work, but we might as well want to.

ABSTRACT

Angeliki Poulou

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Soundwalking and archiving, Convergences and tensions

Sound artists experience, document, recreate the space and the sound, producing in situ archival material. Thus, a sound-walk is also an idiomatic recording of the here and now: sounds, voices, interviews compose files on the computer, then placed on the map. What is the value of this material outside the context of the sound-walk? Could we consider these interviews and recordings as a trustworthy primary archive, able to be further used as anthropological and historical material? Digital humanities pose such questions: how do we map and archive our era? Do these artists produce the archive of the future? And what if we consider these ephemeral micro-archives as imprints of the city, just like the 20th century perceived the Graving of the 19th century landscapes and cities? This paper attempts to address issues related to the concept of archive seen through new media art, in dialogue with the practice of field recording and the artwork "audio walks". With the basic assumption that through sound deambulations artists rewrite the text of the city creating new dramaturgies. However, our approach is critical regarding the contemporary recording and archiving mania. It seems that the experience and the moment are subjected to the need for continuous mediation. The terror of the vacuum and the identity. The anxiety to exist unmediated. The presentation will be unfolded with references to (sound) walks of domestic and international artists.

ABSTRACT

Maria - Elisavet Kampi

School of Fine Arts, Greece

Four Sons of Space. with an armor on or without. Matters of space and the image in art {and design} practice. The two dimensional and the three dimensional, the screen and the canvas in the post-digital era

In this writing, space is defined as the dimensions of height, depth, and width within which all things exist, move and occur in. By space the notion of field is also referred.

In a sense, in a simplified hypothesis, the time of practice is also involved or included in this characterization -of space- as it is a parameter which defines "some-thing"'s existence, according to how "the thing" is defined by Aristotle (Metaphysics V, 2). Contemporary Art {and design} practice bring the discussion of the two-dimensional surface as space, that of canvas or the screen. How does the mesh of the computer or the monitor screen acts as a canvas for composition, expression and exposure? How does the "space" of the internet acts as "gallery space". How non-physical environments like the internet substitute or complement the physical ones, like the walls, the paint, the gallery, the museum, the canvas, allowing only one sense of contact to establish, express and to understand that new world seeing. As J. Berger stated "it is seeing which establishes our place in the surrounding world" (Ways of Seeing, 1972).

Initially by referring to M.Heidigger's remarks in Art and Space (1969) what will be attempted is the identification of the role of space mainly in the art practice, as well as the discussion of the use of the the screen as canvas, as spacial context and environment.

Additionally to the "spacial" parameter that has been put in frame, which has been defined as the screen -canvas/mesh, the screen serving as the canvas, the practitioners will also be discussed in categories of brief descriptive 'profiling' depending on their approach to practice, the context plus the content of their work in order to discuss some main elements that are dominant in the field today; titled The dreamer, The philosopher, The Joker The Video Gamer. Each category links the practitioners with their artwork's relation to "space" and how this serves their content as well as how it determines and signals their context of practice - digital art, internet art etc.

The timeless quest and question about the survival of the image is also put in perspective, as in our contemporary period of practice there is a temporality of the image. Taking Didi-Hubermann's The survival of the Image (2002) as point of departure regarding the conceptions of time, memory, and photography, image and the role of time and space in our conceptions of digital art and how "image" is treated is discussed- in the physical space or the internet.

Fastly produced fastly consumed. Produced on the internet "consumed" on the internet. Imagery created to exist only temporarily but still serving as art. For how long is forever? Where is forever?

Artists, designers, scientists, explorers and so many more living in the so called "Digital" and the "post-digital" age, having to face the favours and challenges of an overall transition. Or is the transition over and we live in the "post", the "meta" era that where the matter of space is solved? Is the digital space is the new alternative space?

This skepticism passes on to our practice. It is not only if and how the new digital means are used (software, design tools means of presentation) but it is also how they are perceived by the viewers.

The screen is not only a "workspace" it is also the platform of communication. Art is created "in" the screen consumed in the screen, art that is created on the screen but printed on paper art that is created on the screen exported and presented on another screen but in space (e.g. in a museum) .

Fusion of the technical means of artistic creation and presentation. A transition of the art piece from the 2-D space of the screen onto another that of paper or that of another screen, play and games with dimensions.

Since by space we define any mesh, three-dimensional or two-dimensional, tangible - non-tangible this paper explores the conceptual play occurring between environments and the journey between dimensions of the art works that involve digital intervention during their creation, exclusively or partially. Through observations made during personal art practice as a digital and an analog artist and by reviewing as an active spectator, user and reader, it is attempted to raise a discussion around the matter of the image and its treatment in contemporary (digital) art practice and scene, in terms of its physical handling and existence as well as how it survives and how it exists in space.

Session 7: Digital Culture and Technologies II

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ABSTRACT

Luc Messinezis, Apostolos Loufopoulos

Ionian University, Greece

Orders of the heard. The sacramental order

Postmodernist thinkers and scholars have elaborated extensively on the fact that reality seems to start being preceded by things that are not real. Should we observe the world around us nowadays, we can see wax celebrities, digital avatars, plastic crocodiles, reconstructed histories and translated binary code into valleys and mountains of a virtual world. We can also see the machine thinking and talking like a human; first faking it, then imitating it, reflecting it and finally simulating all the attributes of reality in such a way, that the non-real feels more concrete and profound than the real. The simulacra are here and as it seems, they came to stay. Consequently what applies for the tangible world of appearances, should apply as well to the immaterial realm of the heard. Recent literature has focused on examining the influence simulations may have in contemporary life and the perception of our world. Additionally, within the theme of auditory arts, a lot of texts and practices focus on the attributes of acoustic reality and the possibilities of sound or listening. So what about aural reality in relation to what has been called the precession of the simulacra? With our recent research, we attempt to define 'aural simulacra' and investigate their role within a contemporary arts context. In perfect analogy, what Jean Baudrillard calls 'the orders of the image', corresponds to what we call the 'Orders of the heard'. All we need is to read the audio signal as a sign and the sacramental order, the order of maleficence, the order of sorcery and that of pure aural simulacra unveil their existence and importance within our field of study. With this article, we initiate a practice based research series of all these orders of the heard. Following the conceptual metamorphosis of the audio signal as it journeys through succession of different eras; we first stumble upon the sacramental order; simulations that are an exact reflection of a profound acoustic reality. However, what is it exactly? Which signals claim their placement in it and which of their attributes define this. Finally, questions regarding the relationship between media of capture and of reproduction with these signals arise and merit our attention. Through practice and parallel scholarly research, we embark on a journey of exploration, investigating processes and trying to identify and utilize the attributes of the sacramental order. We attempt to unleash its potential in favor of the production of an original artwork. Through creative processes, the effect these realizations have on sound arts practice and research unfold, especially regarding soundscape studies, composition, and sound installation art. Finally, we come to observe the possibility these attributes influence the relationship between the artists and their work as well as between the produced outcome and the audience.

Luc Messinezis is an artist and researcher working across sound, installation and performance. His practice explores aural awareness, anthropology, notions of reality and authenticity. He has presented a multitude of artworks across the globe and currently scrutinizes 'Aural Simulacra'. Notable activities include his presentations at Ethnographic Terminalia 2011 (CA), Athens Digital Art Festival 2015 (GR) and Science Gallery Melbourne 2019 (AU) among others. Also, he was nominated for the ScreenGrab7 2015 Media Award (AU) for his work 'The Modern book of Cynics', while his article 'Aural Simulacra: the signal's path to metamorphosis' was published in the Technoetic Arts Journal 2017.

Apostolos Loufopoulos works with sound and digital media and is interested in the sound of the natural world and its potential for musical exploration. He holds a PhD from City University, London and he is appointed as Assistant Professor at the Ionian University, Department of Audiovisual Arts (GR). He has performed in renowned festivals of contemporary music and has received a number of awards at international competitions such as Ars Electronica (AT). In academic research, he has worked on important projects regarding the creative study on environmental sound and he is a founding member of HELMCA and the Greek Society for Acoustic Ecology.

ABSTRACT

Martin Carlé

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Turning Digital Humanities into a lisp machine

Summary: DH or 'Digital Humanities' is on everyone's lips. Understanding the term, however, as simply referring to an application of 'digital methods' and that the 'digital literacy' necessary therefor would primarily demand teaching the humanist programming languages, in effect, betrays the original concept. By contrast, this contribution shall elucidate DH as a notion that calls for a restatement of literate programming built on the merits of lisp concepts and the respective coding culture.

Objective: When speaking about Digital Humanities people commonly refer to the workflow pattern of a certain 'Digital Culture' which may be described as proceeding along the following triad: (i) the digitisation of artefacts formerly and predominantly studied by the 'soft sciences', (ii) the application of 'digital' methods of the 'hard sciences' and (iii) the re-animation of those artefacts by means of 'digital media'. The last step is often artistically rendered or otherwise designed as to enhance the accessibility, the usability and—last but not least—the comprehension of the subject matter.

Seeing DH this way, however, means ignoring that the very notion was deliberately coined as to sound like a contradiction in terms that asks for a more substantial synthesis than a digitally polished adjustment, (re-)presentation or even commodification of 'knowledge'. In actual fact, the term was not merely intended to be a descriptive but rather a programmatic one aiming to overcome "The Two Cultures" [Snow 1959].

As a consequence, we are asked to take a radical look at the the humanist's 'program' itself and the associated divide into two cultures. Raising this objective in Greece, requests—more than anywhere else—to trace both, (i) the issue of the divide and (ii) the targeted synthesis of terms, back to its very origins.

Method: The method to achieve this objective is itself twofold, but all literal: it consists in (i) the conduct of a literal historical analysis and (ii) the adaptation of literate programming as the general synthesis.

From as early as in Plato's late, but nonetheless poetic works concerning human kind, philosophy has always taken a culture-critical stance about too general divisions, e.g. of all mankind into Greek and foreign speaking people, namely, into the few taking part in λόγος and the uneducated masses of barbarians. Only shortly after, in an utmost sober, if not 'dry' manner, the decisive difference of being human has been technically identified by the son of a medical doctor, Aristotle. In literal sense, his all-pervasive dictum ἄνθρωπος λόγον ἔχων' equivocally names man to be the "animal that has" (i) "words" as much as (ii) "numbers in relation".

The shortest answer the full paper shall elaborate on, may be given in three words just as well: LISP is LOGOS. In this vein, lisp is not merely regarded as one of the first and still existing programming languages, but just like Greek, to be the actual mother tongue of all computer system philosophy that dealt from the outset with 'digital culture' and human thinking from a systematic and methodological perspective.

In the spring of artificial intelligence (AI) where LISP-Processing played a central role, the computational concepts of 'LISP' always put strong emphasis on how a digital infrastructure must be designed as to mimic, ease or even implement human thought processes. Besides the obvious that symbolic as opposed to numerical computing systematically bridges the gap between words and numbers, the λόγος of lisp shines most brightly for lifting von Neumanns assembler based 'code as data' into 'homoiconicity' of a higher language or computational abstraction. Being able to reasonably operate on a language's bytecode representation at runtime, also known as the concept of full reflection, provided the essential and well documented reason to create GNU Emacs.

Conclusion: In terms of a conclusion, it shall be argued that what historically started as an extensible self-documenting 'Editor for MACroS', has de facto grown to be the lisp machine that provides the technical infrastructure as well as the cultural ecosystem to carry out digital research on matters of the humanities in such a way as to close the mentioned gap. This can be evinced on the lines that (i) literate programming is an offspring of lisp coding culture, (ii) that its today's adaptation as EMACS' org-babel enables for a respective cognitive lifting to meta-programming as full reflection did to lisp and (iii) that only when reaching such a level of 'meta-programming' as opposed to raw implementation or application skills, it can be guaranteed that the subject matter does not vanish because the methodological engagement itself will lift it on the same operational level. projects regarding the creative study on environmental sound and he is a founding member of HELMCA and the Greek Society for Acoustic Ecology.

ABSTRACT

Vasilis Agiomyrgianakis

Ionian University, Greece

Live coding and Poetry: A text-driven synthesis technique in musical live coding

The objective of this proposal is to investigate the aesthetic potential of incorporating a text-driven sound synthesis technique in musical live coding. The main goal is to use Homer's The Odyssey and dactylic hexameter as a musical score to drive the creative flow of improvisation in live coding performances and at the same time to project both the code and the poem onto the screen. Both the projection of the code and the results of its execution can be used as an event score for the performer and as a blueprint which the audience can easily read during the live coding. Coding is difficult to read and understand and as a result people may lose contact with the performers. Poetry on the other hand is a medium that people can easily understand and, in my opinion, make a connection with the musical output during the live coding performance.

Additionally, the juxtaposition between systems found in disciplines such as literature and coding, proposes an alternative way of presenting and improvising live coding. Moreover, this project will contribute to reproducible research by testing several cases from related but distinct research areas of musical live coding, data sonification and creative writing.

ABSTRACT

Maria Papadopoulou

Aristotle University of Thessaloniki, Greece

Greek Cinema and Representations of Disabled People – Autism

Through this research an attempt is being made to explore the way in which the person with disabilities is represented in Greek cinema and how Greek cinema is been influenced by Hollywood cinematic representations. In particular, this research begins with the disabilities representations, and then focuses on cinematic representations of people with Pervasive Developmental Disorders (for reasons of brevity, it will be refer as autism).

Objective: The present research is not only aimed at recording a series of films that have incorporated into their myths a character with autism, but also it sets two main goals: a) the in-depth study of the way in which the cinematic representation of the character is built as well as b) the study of social representations created through the cinematic representations of people with special needs in general and with autism in particular. Based on the stated objectives, the following research questions have been investigated: 1) According to the literature how the film character of the person with autism is been portrayed in a Hollywood movie? 2) How the cinematic character of the autistic person is been portrayed in Greek Cinema? 3) What kinds of social representations are created from these cinematic representations?

Method: In order for this bibliographic research to work flawlessly it was divided into six sections.

The first section deals with the definitions of social representations and their connection to cinema.

The second section present the history of representation of disability in cinema.

The third section deals with the definition of the Autistic Person and examines some of its characteristics.

The fourth section deals with the cinematic character of the autistic person linking Greek cinema to Hollywood.

In the fifth section presents the conclusions of the analysis of the two main films Rain Man (1988) and Η Ζωή με τον Αλκη (I Zoi me ton Alki) (1988).

Finally, the sixth section refers to the objects that were dealt with in the present research, and presents the conclusions that arise.

Conclusion: This research has focused on Greek cinema in conjunction with Hollywood cinema. The following two films were selected as prime examples a) Rain Man (1988) by Barry Levinson and b) Η ζωή με τον Αλκη (1988) by Dimitris Kollatos, because Rain Man is Hollywood's first film to deal clearly with the issue of autism and Η ζωή με τον Αλκη is the first Greek film in which myth is knit around an autistic character. Coincidentally, both films were screened at the same time and the two films influenced the audience who watched them.

In many cases cinema gives the characters that represents a distorted identity which is either positive or negative. Unavoidably, poses the question of whether cinema actually reflects society, its wishes and beliefs or whether society tends to borrow (human) attitudes and behaviors from it.

It should be noted that there is a rich literature on Hollywood about the social representations produced through the cinematic representations of people with autism as opposed to the similar research in Greek Cinema which is minimal. Therefore, it is an unknown field that needs to be more thoroughly investigated.'

I was born in Thessaloniki in 1979. I have a bachelor and a Master's degree from the School of Visual and Applied Arts of Aristotle University of Thessaloniki. I also have a Master's degree from Ionian University in Audiovisual Arts. Curently, I attend the P.H.D. programm in School of Film Studies of Aristotle University of Thessaloniki. I work as an art teacher in schools with studens with spesial needs and I teache history of art in vocational training institutes. I have participated in more than go art exhibitions in Greece, Canada, Spain, Germany and Serbia.

ABSTRACT

Geogre Metaxiotis

Aristotle University of Thessaloniki, Greece

Designing and performing technology in digital storytelling workshops

Summary

Digital Storytelling Workshop methodology was introduced in California at 1992 and is still creating thriving educational and artistic projects around the world. The expanding and versatility of the genre rely heavily on a single interdisciplinary premise: the media facilitator cannot design and perform the technological without the linguistic and the performative element of the workshop.

Abstract

Most of the media literacy projects, either educational or artistic, look obsolete, almost 2 or 3 years after their introduction, as their design tend to overemphasize: a) the technological innovation of the media representations b) the symbolic, written message or c) the performance of the individual experience. On the contrary, the Digital Storytelling Workshop methodology, developed a coherent media/writing/performance design that survived for more than 25 years of overwhelming technological and scientific advances, and numerous aesthetic transitions. This hybrid structure reflected and adopted successfully the convergence of technologies and literacies during the multimedia era.

In this paper, through various examples from 14 hands-on workshops, that I performed in several educational and artistic contexts in Greece, I present the successful practices, techniques and technologies employed in this specific digital design format. This hybrid methodology was established by J. Lampert and D. Atchley (Lambert, 2013) and developed as a genre through 3 major Digital Storytelling Guides, written by the CDS, the BBC and the DigEm projects.¹ The most common media practices I facilitated and tested through my research were: blue screen, photography and video techniques, Photoshop, non-linear editing, animation, clay making, stop motion. These practices and technologies were tested, compared and related to more traditional practices like drawing, drama and writing exercises.

One of the main findings resulting from the analysis of the 150 produced stories and their production process (Metaxiotis, 2018) was that no specific technological skill, the participants already had, or ICT design practice I facilitated, had any significant correlation to the successful multimedia meaning production: In any number of different stories the use of the same technique, technological practice (grammar, aesthetic rule, or protocol), was leading to completely different results. The initial professional design of the technological format of the workshop was challenged and sometimes completely altered by the individual user-experience, media skills/ knowledge and vernacular creativity of the participants.

In order to understand participatory and user-led multimedia design, the only functioning theoretical background consistent to the data, was the universal semiotic multimodal grammar described by Peirce (1998) in his studies of semiotics. The sign, according to Peirce, in its relation with the objects, is composed of three distinct and always intertwined elements: a) the alphabetical modality (symbolicity) b) the numerical modality (iconicity) and c) the human or non-human agency that creates specific combinations of symbols and measurements (indexicality). This universal multimodal grammar introduces a huge paradigm shift from communication as understanding and interpretation to communication as an open project of translation according to Science and Technology Studies and the Translation Theory (Latour 2005 and Callon 1984). In this context, all technological elements of the multimedia design do not have any autonomous value and is impossible to understand through traditional linguistic or mathematical interpretative methodologies. They are semiotic resources we use to translate our multisensory individual experiences. As a result, the most successful digital stories of my projects did not depend on how many photographs, animations were used or what specific interactive, 3D, or other software was employed, but on how these available technologies were coherent with verbal images and performance images to create functional representations.

Concluding, multimedia technologies may be relatively recent in human history but they reflect the fact that meaning production was always a multimodal and multisensory human process. This new hybrid Digital Storytelling Workshop methodology provides a specific set of valid and reliable macros, that are part human and part technological, and guide the participants, on how to effectively use their individual multisensory experiences to transform the multimedia public domain.

ENDNOTES

1. <http://www.bbc.co.uk/wales/audiovideo/sites/galleries/pages/digitalstorytelling.shtml>, b) <https://www.storycenter.org/>, c) www.digem.eu

ABSTRACT

Alkistis Georgiou

Aristotle University of Thessaloniki, Greece

Designing and performing technology in digital storytelling workshops

Everything that is past is a prologue. The theme of this paper is about the concepts of memory, familiarity and intuition. Memory along with its loss, hunt me every time I come up with a novel artistic idea. It returns as a reminder, the feeling that something has not been mentioned or transcribed, or that something still needs to be said. Familiarization is the first step in accepting an obsession or a feature. I am therefore familiar, with the fact that memory is a permanent concern and that I cannot allow memories of others be lost. Thus, I collect such memories carefully, hoping to continue their story somehow. Finally, wandering among places, people, countries, and moments, I conclude to the afore mentioned. It was Confucius who wrote: study the past, if you want to define the future. By taking this into consideration, I will continue with the treaty that allows me to try this. The Treaty is as follows. She's a traveling girl. In every place that she has found herself living, either for a long or for a short time, she winds up in forgotten old photographs. The girl collects or purchases these photographs and continues the journey with them. Ansel Adams believes that photography reflects the face of a great mystery. The more we see, the less we know. This mystery exists, it experiences it whenever it finds the pictures and it is ambiguous. On the one hand, how and why these photos were found where they were found and on the other hand, what is hide by this momentary imprint. How many stories have been told or are waiting to be said. Marilyn Robinson has written that memory is a sense of loss, and loss attracts us. This, for Freud to respond in a hypothetical discussion that it is the hysterics who suffer mainly from memories. My problem is time. Time is subjective. My question is this: How long does forever last? The past is a foreign country. They do things differently there. The relativity of time, the fact that people are lost, while the objects are staying, it frightens me. The photos have captured forever (if forever exists) a moment that is lost and in no way will be found again. What photography reproduces infinitely does happen but once. Bart calls the energy-a mixture of pleasure and effort-that develops the subject to regain a detail of remembrance without enlarging it or making it vibrate. "In search of lost time" as a book is the trigger for many of my thoughts on the issue of time. Paul Zannas, when he presented the section "From the side of Swan", used the following words: Combray is a small town where the narrator's first child memories can be traced. This is where the search for lost time starts, from this world that suddenly becomes accessible with the unconscious memory while the images, the sounds and the fragrances of a past era come to life unpredictably, through the taste of a madeleine dipped in a cup of tea. Memory, the issue of time is such a great concern to me, because I face a difficulty in accepting death in general, and more specifically, the memories that will be lost. By picking up objects, books, clothes, photos from different times and unknown people, I feel that in some way I am prolonging the life of their memories. Deep inside, I hope that something similar might happen to my belonging when I'm not around anymore. It is a peculiar form of posthumous fame without the cause of a literal work, but simply due to the passing of life. The way I chose to approach this obsession is the interactive installation named *déjà vu*. Digitizing time in some way. Through the use of all these objects, I will compose a map in the world: how all these people meet through their memories. Linking link: I, while wandering around, gathered them and introduced them to each other in this odd manner. Who can answer me though, that these people had never met before? It's only speculation but maybe, all of them, somewhere, somehow, had met.

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