Short Learning Program of Art, Design & sustainability with special focus on environment and climate change

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MODULE 3

Digital tools for the interactive engagement of audiences with Art and Design

Pujadas, A., Englezou, D., Hadjipapa-Gee, S , Mihai-Yiannaki, S., Anastasiades, T.Bacelar-Nicolau, P., Mapar, M., Alves da Veiga, P., Caeiro, S., Bidarra, J., Contino, A., Hillenius, M. (2023). “MODULE 3. Digital tools for the interactive engagement of audiences with Art and Design”. EINA (Coord.), European University Cyprus, Universidade Aberta, MyDocumenta. p.14. (Available in 5 Languages: English, Spanish, Portuguese, Greek, Catalan; https://ardesproject.eu/).

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Overview of Module 3

Module 3 Digital tools for the interactive engagement of audiences with Art and Design					
Lesson	**Topics**	**Time (h)**	**Week**	**Activity**	**Compulsory/ Optional**
Lesson 1 Handling data and big data through creative digital tools	Topic 1: Data and Big data (soil, water, weather, etc.) interpretation and visualisation tools, techniques and methodologies	13	Week 1	A1. Local visual narrative Working with local databases" A2. European visual narrative Working with European databases"	optional (1 per lesson/topic)
Lesson 2 Creative digital tools for live communication and interaction	Topic 1: Live interaction tools	13	Week 2	A1 Live performance (with Improvisa) A2. Interactive survey working with European databases	optional (1 per lesson/topic)
Lesson 3 Designing user experiences for increased audience engagement	Topic 1: Data Creative technologies and tools for collaboration, co-construction of cultural meanings, fields, and audience engagement.	26	Week 3&4	A1. Designing a participative action A2. Writing an essay	optional (1 per lesson/topic)

Lesson 1 Content

Outlines

Topic 1: Data and Big data (soil, water, weather, etc.) interpretation and visualisation tools, techniques and methodologies

In this lesson, the students become familiar with the terminology and core concepts behind big data and application. They learn to understand the main theoretical approaches in handling data visually, and become aware of the challenge that lies in data interpretation, and of the power of visualizations that offer a swift, intuitive and simpler way of conveying critical concepts universally.

Essential Questions

- What are ways in which scientists or artists can make data easier for the general public to understand?
- How does data visualization explain the complex and multifaceted phenomena that rule our world?
- Could we reclaim a personal approach to how data is captured, analyzed and displayed?

Educational Materials

Tools for data visualization

- Observable (2023). Collaborative data platform and canvas. https://observablehq.com/
- RAWGraphs (2023). A free and open source tool for data visualization. https://www.rawgraphs.io/
- infogram (2023). Create engaging infographics and reports. https://infogram.com/
- CARTO (2023). Spatial analytics for the modern data stack. https://carto.com/

Design & Artworks with data

- Domestic Data Streamers (2023). Official webpage. https://domesticstreamers.com/
- Iconoclasistas (2023). Official webpage https://iconoclasistas.net/

Databases specialized in Sustainability and Climate Change

- NASA. Global Climate Change. Vital signs of the Planet. https://climate.nasa.gov/
- The World Bank. Climate Change Data. https://data.worldbank.org/topic/19
- IPI Global Observatory (2021). "New Climate data Visualizations". Climate data Visualizations. https://theglobalobservatory.org/2021/12/new-climate-data-visualizations-2021/
- Climate GOV (2023). "Visualizing Climate Data". Science & Information for a climate-smart nation. https://www.climate.gov/maps-data/climate-data-primer/visualizing-climate-data
- Climate GOV (2023). Finding Climate Data". Science & Information for a climate-smart nation. https://www.climate.gov/maps-data/climate-data-primer/finding-climate-data
- Climate GOV (2023). "Dataset Gallery ". Science & Information for a climate-smart nation. https://www.climate.gov/maps-data/all?listingMain=datasetgallery

Videos

- The Art of Data Visualization | Off Book | PBS Digital Studios 7'47" https://www.youtube.com/watch?v=AdSZJzb-aX8
- Data science for the environment | Dan Hammer | TEDxBerkeley 7'23" https://www.youtube.com/watch?v=ph439t-kTIE
- BSC CNS. Big data and climate change 2'41" https://www.youtube.com/watch?v=xajNochi7tM
- Nathalie Miebach: Art made of storms 4'19" https://www.youtube.com/watch?v=MbhNaj88uL4

Further Reading

- Friendly, M. (2008). A Brief History of Data Visualization. in Handbook of Data Visualization, eds. Chunhouh Chen, Wolfgang Härdle and Antony Unwin. Berlin: Springer.15–56. https://haralick.org/DV/Handbook_of_Data_Visualization.pdf
- Viégas, F.B., Wattenberg, M. (2007). Artistic Data Visualization: Beyond Visual Analytics. In: Schuler, D. (eds) Online Communities and Social Computing. OCSC. Lecture Notes in Computer Science, vol 4564. Springer, Berlin, Heidelberg. https://link.springer.com/content/pdf/10.1007%2F978-3-540-73257-0_21.pdf
- Segel, E., Jeffry H. (2010). Narrative Visualization: Telling Stories with Data. IEEE Trans. on Visualization and Computer Graphics 16(6). http://vis.stanford.edu/files/2010-Narrative-InfoVis.pd

- Lupi, G. Data Humanism. (2013). The Revolution will be Visualized. Originally published on PrintMag. http://giorgialupi.com/data-humanism-my-manifesto-for-a-new-data-wold

Learning Activities

Name of Activity	Setting	Aim	Time (hours)
A1. Local visual narrative Working with local databases	Independent /Group Online and Classroom	Learn to search for multiple data sources on sustainability and Climate Change , both quantitative and qualitative, and then combine them into a single elaborate visual narrative	13

Instruction

TEACHER

Step 0 - Presentation & introduction of the subject. Provide the most relevant research lines to work with (these are the "Essential Questions"). Introduction to the most relevant climate change and sustainability databases. Presentation of the most relevant online data visualisation tools (3 hours)

STUDENT

Step 1- Become familiar with the most relevant Local databases, visualizations and tools (1 hour)

Step 2- Select one of the research lines provided by the teacher to work with. Do research in this chosen area and find databases relevant to that issue. (2 hours)

Step 3- Use one of the online tools to create a particular visualisation of this problem with a critical and reflexive focus. (4 hours)

Step 4- Project feedback. Minutes distributed according to the number of groups (1 hour)

Step 5- Reviewing the project taking into account the feedback and preparing the public presentation (1 hour)

Step 6- Presentation of the results to the rest of the class (1 hour)

Name of Activity	Setting	Aim	Time (hours)
A2. European visual narrative Working with European databases	Independent/ Group Online and Classroom	Learn to search for multiple data sources on Climate Change & Sustainability, both quantitative and	13

qualitative, and then combine them into a single elaborate visual narrative

Instruction

TEACHER

Step 0 - Presentation & introduction of the subject. Provide the most relevant research lines to work with (these are the "Essential Questions"). Introduction to the most relevant climate change and sustainability databases. Presentation of the most relevant online data visualisation tools (3 hours)

STUDENT

Step 1- Become familiar with the most relevant European databases, visualizations and tools (1 hour)

Step 2- Select one of the research lines provided by the teacher to work with. Do research in this chosen area and find databases relevant to that issue. (2 hours)

Step 3- Use one of the online tools to create a particular visualisation of this problem with a critical and reflexive focus. (4 hours)

Step 4- Project feedback. Minutes distributed according to the number of groups (1 hour)

Step 5- Reviewing the project taking into account the feedback and preparing the public presentation (1 hour)

Step 6- Presentation of the results to the rest of the class (1 hour)

Lesson 2 Content

Outlines

Topic 1: Live interaction tools

In this topic , students will learn about the basic principles of audience engagement and the role of interaction technologies. They will explore different live interaction technologies and learn about the specificities of each one (streaming, web-based, app, wearables, crowd monitoring).

Essential Questions

- What is Live interaction and its main concepts?
- What are its fields of application?
- How is a live interaction experience created?
- How can live interaction be used in relation to different user groups, with different needs and objectives?

Educational Materials

- IMPROVISA (2023). Live audiovisual performances. http://www.improvisa.es
- Kalliópê (2023). Massive Interaction Suite. https://www.kalliopesuite.com/
- Miro (32023). Templates Library to team collaboration. https://miro.com/templates/
- Service Design toolkit (2023). Templates. https://servicedesigntoolkit.org/downloads.html
- Smart Design (2023). Design for digital well-being. Elevating the voices of young people through co-design. https://smartdesignworldwide.com/projects/meta/

Videos

- Localish. (2020). Wonderspaces: Largest Interactive Art Museum in Philadelphia. My Go-To. Video available on: https://www.youtube.com/watch?v=MvniFaMRte0
- Sónar+D CCCB. (2020). Carles Viarnès & Alba G. Corral. 360º AV Show. Video available on: https://www.youtube.com/watch?v=EMO45Y0Jazs
- Vitamin Studio. (2021). Reel. Video available on: https://www.youtube.com/watch?v=0SMaBOpFo3A
- EPICALAB. Espacio de aprendizaje multidisciplinar alrededor de las artes escénicas. (2017). La memoria del espacio. Video available on: https://epicalab.com/es/workshops/la-memoria-del-espacio/
- EPICALAB. Espacio de aprendizaje multidisciplinar alrededor de las artes escénicas. (2018). Información vs Memoria. Video available on: https://epicalab.com/es/workshops/infomemory/
- EPICALAB. Espacio de aprendizaje multidisciplinar alrededor de las artes escénicas. (2020). ¿Quién gana la corona? / Bodas de sangre. Video available on: https://epicalab.com/es/workshops/bodas-de-sangre/
- Da Milano, C. (2018). ¿What's the meaning of audience development nowadays?. Universidad de Deusto. Video available on: https://www.youtube.com/watch?v=Brr9dGg_jkk&t=3s

Further Reading

- Coulton, Paul [et al]. (2018). The Little Book of Design Fiction for the Internet of Things. Lancaster University https://www.researchgate.net/publication/323259370
- EPICALAB. Espacio de aprendizaje multidisciplinar alrededor de las artes escénicas. (2018). https://epicalab.com/es/
- Kwastek, K. (2013). A theory of the aesthetics of interaction, and exemplary case studies of interactive media art. Aesthetics of Interaction in Digital Art. MIT Press.

Learning Activities

Name of Activity	Setting	Aim	Time (hours)
A1. Live performance	Independent / Group Online and Classroom	Development and implementation of a short live interaction experience designed by the students on the issues of Sustainability and Climate Change .	13

Instruction

Instruction

TEACHER

Step 0- Presentation of the subject. Introduction to the live communication tools. Provide the most relevant research lines to work with (these are the "Essential Questions"). (1 hour)

STUDENT

Step 1- Become familiar with the IMPROVISA online tool (1 hour)

Step 2- Try the IMPROVISA tool with the online material and perform live your results on public (2 hours)

Step 3 - Select one of the research lines provided by the teacher to work with. Shoot 3 or 4 videos following the teacher instructions (1 hour)

Step 4 - Design a IMPROVISA live audiovisual performance (2 hours)

Step 5 - Test the project. Rehearsal live with the group and the teacher (1 hour)

Step 6 - Project feedback. Minutes distributed according to the number of projects (1 hour)

Step 7 - Reviewing the project taking into account the feedback and preparing the performance (1 hour)

Step 8 - Live audiovisual performance. Documentation of the live performance done. (3 hours)

Name of Activity	Setting	Aim	Time (hours)
A2. Interactive survey	Independent / Group Online and Classroom	Learn to search for multiple data sources on sustainability and Climate Change , both quantitative and qualitative, and then combine them into a single elaborate visual narrative	13

Instruction

TEACHER

Step 0- Presentation of the subject. Introduction to the live communication tools. Provide the most relevant research lines to work with (these are the "Essential Questions"). (2 hours)

STUDENT

Step 1- Become familiar with the live communication tools. (2 hours)

Step 2- Select one of the research lines provided by the teacher to work with. Select context and target a specific audience. (1 hour)

Step 3- Design a participatory survey about this issue and publish it. (3 hours)

Step 4- Collecting the data of the survey, analysing and summarizing conclusions. (2 hours)

Step 5- Project feedback. Minutes are distributed according to the number of groups. (1 hour)

Step 6- Reviewing the project taking into account the feedback and preparing the public presentation. (1 hour)

Step 7- Public presentation of the results of the survey. (1 hour)

Lesson 3 Content

Outlines

Topic 1: Digital tools for the interactive engagement of audiences with Art and Design

[Summary]

In this lesson, students will learn how creative technologies and tools for collaboration and co-construction can help design user experiences for increased audience involvement. They will also discuss the ethics of the use of technology and the danger of manipulation.

Essential Questions

- How can art mediation and art performative methodologies help us to design user experiences for increased audience involvement?
- How to move away from standardized institutional approaches to participation and social engagement?
- How to establish a meaningful relationship through technology between the different stakeholders involved in a participatory process?
- How can technology and interaction with users be designed and used to manipulate their opinions, ideas, and attitudes?

Educational Materials

- Caroline Lang, John Reeve, Vicky Woollard. 2006. *The Responsive Museum: working with audiences in the twenty-first century*. Routledge.

- Costa, T.; Garcia Mateu, A. (2015). Transition Design: investigación y diseño colaborativo para procesos de emancipación ciudadanos. https://revistes.ub.edu/index.php/REGAC/article/view/regac2015.1.06/19255
- Fontdevila, Oriol. (2017). The art of mediation https://oriolfontdevila.net/the-art-of-mediation/
- Illeris, H. (2006). Museums and Galleries as Performative Sites for Lifelong Learning. In: *Museum and Society,* 4(1), pp. 15-26. (12 p) https://www.researchgate.net/publication/228359602_Museums_and_galleries_as_performative_sites_for_lifelong_learning_Constructions_deconstructions_and_reconstructions_of_audience_positions_in_museum_and
- Lind, M. (2013). Why Mediate Art?. In: VVAA. *Ten Fundamental Questions of Curating*. 2013. Jens Hoffmann Editions. https://www.marysialewandowska.com/wp-content/uploads/2011/05/Maria-Lind_Why-Mediate-Art-.pdf

Videos

- TateShots. (2018). How Art Became Active. Performance and Protest: Can Art Change Society?. Ep. 5 of 5. Video available on: https://www.youtube.com/watch?v=XGy9yJN12lo.
- Museums & Galleries of NSW. (2019). Cultural Mediation in Practice. Video available on: https://www.youtube.com/watch?v=11voVslTxJY

Further Reading

- Delgado, M (2013). Artivismo y pospolítica. Sobre la estetización de las luchas sociales en contextos urbanos. http://archivoartea.uclm.es/wp-content/uploads/2019/01/Delgado-Manuel-artivismo-pospolitica.pdf
- Grant Kester. 2011. The One and the Many: Contemporary Collaborative Art in a Global Context. Durham, NC.: Duke University Press.
- Saez Ujaque, D., Roca, E., de Balanzó Joue, R., Fuertes, P., & Garcia-Almirall, P. (2021). Resilience and Urban Regeneration Policies. Lessons from Community-Led Initiatives. The Case Study of CanFugarolas in Mataro (Barcelona). *Sustainability*, *13*(22), 12855. https://www.mdpi.com/2071-1050/13/22/12855
- Salas, Javier (2018). "Los 'bots' contaminaron el 1 de octubre con un millón de tuits." El País, 22-02-2018. https://elpais.com/tecnologia/2018/02/22/actualidad/1519294934_671924.html

Learning Activities

Name of Activity	Setting	Aim	Time (hours)
A1. Designing a participative action	Independent / Group Online and Classroom	To design and develop simple participatory experiences using specific technologies and based on art/culture/heritage about Sustainability and Climate Change and targeted to a specific audience.	26

Instruction

TEACHER

Step 0 - Presentation of the subject. Introduction to the different formats, creative technologies and tools for collaboration, co-construction of cultural meanings and audience engagement. Provide the most relevant research lines to work with (these are the "Essential Questions"). (2 hours)

STUDENT

Step 1- Become familiar with the principal techniques and methodologies. (1 hour)
Step 2- Discussion in small or large groups. Debate and guided discussion. (3 hours)
Step 3- Select one of the research lines provided by the teacher to work with. Do research in this chosen area and find works that have already been done as relevant examples. (2 hours)
Step 4- Design a participative action and structure it. Include technology. This participation must have clear indicators to whom it is targeted, what is the objective, what are the limits, what is the technology, and what are the phases. (3 hours)
Step 5- Test inside the group the experience. Simulate. (3 hours)
Step 6- Project feedback. Minutes distributed according to the number of groups (1 hour)
Step 7- Reviewing the project taking into account the feedback and preparing the participative action. (1 hour)
Step 8- Performance of the participative action. Documentation of the action taken. (6 hours)
Step 9- Write a final dossier with the process and conclusions (4 hours)

Name of Activity	Setting	Aim	Time (hours)
A2. Writing an essay	Independent / Group Online and Classroom	Embrace a critical perspective of the creative technologies for collaboration and build a personal discourse about it	26

TEACHER

Step 0 - Presentation of the subject. Introduction to the different formats, creative technologies and tools for collaboration, co-construction of cultural meanings and audience engagement. Provide the most relevant research lines to work with (these are the "Essential Questions"). (2 hours)

STUDENT

Step 1- Become familiar with the principal techniques and methodologies. (1 hour)
Step 2- Discussion in small or large groups. Debate and guided discussion. (3 hours)
Step 3- Select one of the research lines provided by the teacher to work with. Do research in this chosen area and find works that have already been done as relevant examples. Focus on the creative technologies used in these examples. (4 hours)
Step 4- Write a review of the selected examples and make a critical analysis of how the technology is performed, especially considering the ethical implications. (4 hours)
Step 5- Prepare an outline of a possible essay based on the discoveries made so far. (2 hours)
Step 6- Outline feedback. Minutes are distributed according to the number of groups. (1 hour)
Step 7- Write an essay applying the feedback and summarizing all the research materials. (8 hours)
Step 8- Public presentation of the essay. (1 hour)