



Architectural
European Medium-sized City
Arrangement



Co-funded by the
Erasmus+ Programme
of the European Union

IO3
2021

Manual of best practices for a blended flexible training activity in architecture for higher education institutions



**UNIVERSITÀ
DI PARMA**

DIA Dipartimento
di Ingegneria e Architettura



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



Silesian
University
of Technology

**RWTHAACHEN
UNIVERSITY**



Normandie Université

FAMagazine. Research and projects on architecture and the city

ArchéA. Architectural European Medium sized City Arrangement

Editor: Festival Architettura Edizioni, Parma, Italy

ISSN: 2039-0491

DOI: 10.12838/fam/issn2039-0491/n0-2021

Editorial secretariat

c/o Università di Parma
Campus Scienze e Tecnologie
Via G. P. Usberti, 181/a
43124 - Parma (Italia)

Email: redazione@famagazine.it

Email: ArchéA@unibo.it

www.famagazine.it

site.unibo.it/ArchéA/en

Management

Enrico Prandi, (Director) University of Parma

Lamberto Amistadi, (Deputy Director) University of Bologna

This volume returns the results of the Intellectual Output 03 of the research project "ArchéA. Architectural European Medium-sized City Arrangement", with the aim of analyzing and restating the state of the art achieved in the field of flexible mixed training in architecture, strongly encouraged by the emergency period of the Covid-19 pandemic. The result is a collection of good practices carried out internally and externally to the ArchéA partner network, in the context of higher education institutions, made possible by new virtual tools capable of mediating teaching and mixed and flexible learning around the disciplines related to the project.

ArchéA. Architectural European Medium-sized City Arrangement

Project Reference: 2018-1-IT02-KA203-048305

Programme: Erasmus+

Key Action: Cooperation for innovation and the exchange of good practices

Action Type: Strategic Partnerships for higher education

<https://ec.europa.eu>

This manual comes out as a special issue of the "FAMagazine. Researches and projects on architecture and the city", associated partner of the ArchéA research project.

IO3
2021

Manual of best practices for a blended flexible training activity in architecture for higher education institutions

edited by Enrico Prandi and Paolo Strina

Index

Enrico Prandi	About this Manual	7	Maria Panta, Joseph Agyei Danquah	Changing the Curriculum in Architectural Education: the Case of the Trans-African Dialogues Series	107
Enrico Prandi	The teaching of Architecture and the online Learning	9	Antonino Margagliotta, Paolo De Marco, Sete Álvarez Barrena	Beyond the screen	115
	Analisis of the Best Practices <i>Guest professors</i>				
Alessandro Camiz	A Distributed Virtual Learning Environment (DVLE) for a Constructively Aligned Architectural Design Studio	25	Olimpia Niglio, Tsuneaki Fukui	BECC Laboratory in Tokyo. Urban landscape, urban regeneration. Interdisciplinary academic class	123
Tomasz Bradecki	Virtual and Parallel Exhibitions in Urban Planning Teaching. Conclusions from the use of augmented and virtual reality	35	Camille Bidaud	Distance teaching of the history of architecture and urban design?	127
Renato Capozzi	Virtual exhibition for design workshops. Some experiences at DiARC_ University of Naples "Federico II"	43	Bradley Walters	Growth Opportunity: Transforming Studio-Based Education through Digital Tools during the Global SARS- CoV-2 Pandemic at the University of Florida	131
	<i>Call for papers</i>		Milena Guest, Roula Maya, Antonella Di Trani	Reinventing the pedagogy: about architectural and urban utopias. The experience of teaching the humanities and social sciences in a school of architecture during a pandemic.	137
Laura Carnevali, Fabio Colonnese	Teaching drawing in a shared community	53	Marie Chabrol, Anne Portnoï, Gabriella Trotta-Brambilla	Experimenting with a multi-partnership educational project in Cherbourg-en-Cotentin (in the department of la Manche, France)	145
Dariusz Masły	Distance learning of designing high-performance, sustainable, intelligent buildings at the Faculty of Architecture of the Silesian University of Technology	59		State of Art: the experiences of ArchéA's Network	
Renata Jadresin Milic, Catherine Mitchell	An Alternative Approach to Teaching Architectural History: Redrawing the Pedagogical Boundaries between Architectural History and Design Studio with Flexible and Blended Methods	65	Lamberto Amistadi	ArchéA and the pandemic: the Cesena Campus experience	153
Anna Kossak	Evaluation of the current situation of distance education, with reference to the own academic practice	71	Lamberto Amistadi, Enrico Prandi	The ArchéA online Course on the themes of Urban Design. A teaching/learning educational path	159
Özlem Erdoğan Erkarıslan, Yenal Akgün	Design and implementation of online learning process for complex architectural projects: a graduation project example during Covid-19 period	77	Timo Steinmann	Design in the Time of Corona. An Experience Report	167
Veronica Ferrari	Architectural Design Studio activities in times of pandemic. Alternative models and tools for managing mixed-mode teaching	83	Felix Mayer	Experiences with digital teaching formats during the COVID-19 pandemic at the Department of Spatial Design at the Faculty of Architecture, RWTH Aachen University, as illustrated by the course Einführen in das Entwerfen (Introduction to Design)	171
Donatella Scatena, Zeynep Gülel, Sergio Amedeo Terracina, Virginia Volanti	The architectural plan: Teaching and learning methods in social distance's times	89	Michał Stangel	Blended training activities in on-line and on-site exploration of the urban structures	177
Esther Giani	Rarefied atmospheres	95	Paolo Strina	Didactics, seminars and workshops in virtual environments. UNIPR experience in teaching architecture.	187
Renzo Lecardane, Paola La Scala, Bianca Andaloro	International distance learning design experiences. Above the clouds, a project for a temporary event in the Bolognetta valley	101	Pierre-Antoine Sahuc	From pencil to mouse, from face to screen. A teaching experience in times of Covid 19	193
				Conclusions: Guidelines for a blended flexible training activity in architectural HE	199
				Definitions	206

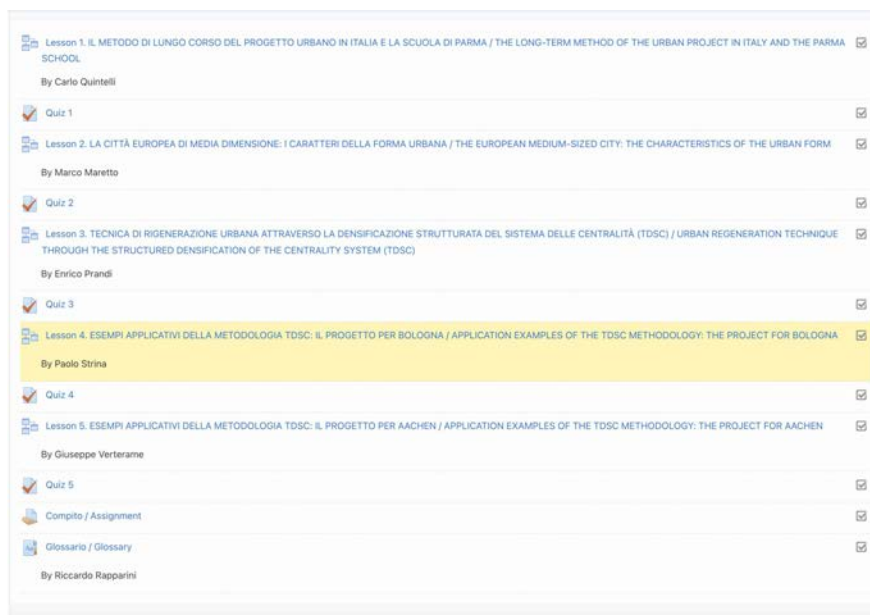
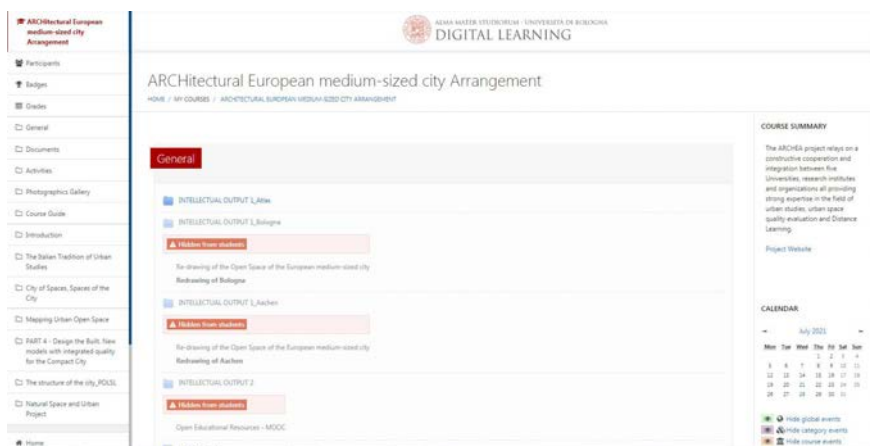


Fig.01 ArchéA Digital E-Learning homepage

Fig.02 Example of e-learning modul

Enrico Prandi
About this manual

University of Parma, Italy

This Manual aims to provide a framework of best practices for a blended flexible training activity in architectural Higher Education.

In 2017, the year in which we built the application, within the *ArchéA* research we were interested in understanding how to combine ICT (Information and Communication Technology) with university teaching in Architecture. We thus hypothesized to experiment with the use of electronic blackboards, tablet and other instruments to be used in teaching, in particular, the architectural project. In practice, we were looking for tools that were useful in the project developed in the shared teacher-student activity laboratories.

After an introduction on The teaching of Architecture and the online Learning, the first part is formed by analyzing the best practices (state of the art) of blended flexible teaching in Higher Education. It is divided into two further parts: the first collects the description of some experiences of scholars who have dealt with the topic, while the second is the selection of articles collected through call for papers. This made it possible to collect interesting testimonies that we were not aware of.

The second part collects the state of the art in the universities involved in the strategic partnership.

The manual is built on the basis of the experiments carried out by the whole *ArchéA* working group. In other words, the indications offered were tested by the partners themselves during the project. The electronic whiteboard for remote reviews was tested in the Architectural Design Workshop and the guidelines are derived from the experience of the *ArchéA* MOOC Course.

A glossary of commonly used terms completes the manual.

Urban Regeneration Towards a Polycentric City	
Lesson 1. IL METODO DI LUNGO CORSO DEL PROGETTO URBANO IN ITALIA E LA SCUOLA DI PARMA / THE LONG-TERM METHOD OF THE URBAN PROJECT IN ITALY AND THE PARMA SCHOOL	By Carlo Quintelli
Quiz 1	
Lesson 2. LA CITTÀ EUROPEA DI MEDIA DIMENSIONE: I CARATTERI DELLA FORMA URBANA / THE EUROPEAN MEDIUM-SIZED CITY: THE CHARACTERISTICS OF THE URBAN FORM	By Marco Maretti
Quiz 2	
Lesson 3. TECNICA DI RIGENERAZIONE URBANA ATTRAVERSO LA DENSIFICAZIONE STRUTTURATA DEL SISTEMA DELLE CENTRALITÀ (TDSC) / URBAN REGENERATION TECHNIQUE THROUGH THE STRUCTURED DENSIFICATION OF THE CENTRALITY SYSTEM (TDSC)	By Enrico Prandi
Quiz 3	
Lesson 4. ESEMPI APPLICATIVI DELLA METODOLOGIA TDSC: IL PROGETTO PER BOLOGNA / APPLICATION EXAMPLES OF THE TDSC METHODOLOGY: THE PROJECT FOR BOLOGNA	By Paolo Strina
Quiz 4	
Lesson 5. ESEMPI APPLICATIVI DELLA METODOLOGIA TDSC: IL PROGETTO PER AACHEN / APPLICATION EXAMPLES OF THE TDSC METHODOLOGY: THE PROJECT FOR AACHEN	By Giuseppe Verterame
Quiz 5	
Compito / Assignment	
Glossario / Glossary	

Lesson 1. IL METODO DI LUNGO CORSO DEL PROGETTO URBANO IN ITALIA E LA SCUOLA DI PARMA / THE LONG-TERM METHOD OF THE URBAN PROJECT IN ITALY AND THE PARMA SCHOOL

By Carlo Quintelli

PREVIEW EDIT REPORTS GRADE ESSAYS



Video

You will not see the progress bar because you can edit this lesson

Fig. 01 The structure of the UNIPR's online course into the MOOC of the research programme ArchéA

Fig. 02 Homepage of the UNIPR's lesson into the ArchéA's online course

DOI: 10.12838/fam/issn2039-0491/n0-2021/815

Enrico Prandi

The teaching of Architecture and the online Learning

University of Parma, Italy

This chapter of the manual intends to reconstruct the path that prompted us to tackle this topic within the ArcheA project.

Upon external request – the call provided for the obligation to follow the directives of the new EU Modernization Agenda for Higher Education (2017) which set among its objectives, in addition to that of increasing the competences and high quality skills of the participants in their own field of studies, the increase of Open Education and Innovative Practices in the digital age – we have imagined how to introduce information technologies in the teaching of architecture.

Teaching of architecture and teaching of the architectural project

Architecture is a discipline of synthesis of different knowledge: it is by definition composite and made up of a part of basic theoretical knowledge and a characterizing part of practical experimentation based on laboratory design activity. Theoretical training is essential and has implications in the practical-planning one. The architectural project must be able to synthesize all the theoretical knowledge (historical, social, technical, technological, etc.) assumed in the other teachings. This aspect is fundamental in the distinction of two different teaching methodologies on which the considerations relating to the modernization of teaching methods will fall.

If the theoretical knowledge in architecture follows teaching methodologies not dissimilar to any other knowledge, humanistic or technical-scientific, for which teaching through the aid of ICT has already undergone extensive experimentation, in the case of the laboratory teaching of the project things appear less obvious and above all lacking in extensive

experimentation.

In the first case, in fact, we have gone from blackboards, projection transparencies and projection of images on slides, to computers and screens in which to project the content of an electronic presentation (such as Powerpoint). In the teaching of the project, on the other hand, the laboratory activity based on doing (on a constant and repeated teacher-student interaction) was affected less by the information revolution which mainly affected the tools of design and representation of the project. If, in fact, until the 1980s-1990s, the representation was based on manual drawings that the student traced directly on the sheet, the advent of the computer led to the appearance of CAD (Computer Aided Drawing) software with which students they design after placing the executive phase delegated to large format printers. In the first phase, therefore, only the drawing tools were replaced, while the methodology of the teacher-student (or student-student in the case of working in groups) iteration remained substantially the same, i.e. the discussion and criticism of the project directly on the sheet of paper. In this first phase, the laboratory classroom was essentially devoid of information technology just as the students had a desktop computer usually at home.

As computer science spread, CAD software evolved to incorporate complex solid modeling functions, students equipped themselves with affordable laptops, the fast, stable and widespread internet network, we witnessed the change of landscape of the classroom-laboratory now equipped with personal computer technologies: in practice, the desks on which until sometime before one drew directly have become simple supports for computers or sheets.

The inevitable point of arrival is now the design directly on the computer by sharing drawings (even with the teacher) and the critical discussion of the project made directly on the screen: in this phase, freehand drawing becomes an action of cultural resistance so that the student does not lose control of the drift shape, the latter very evident in the case of the CAD drawing. The latter, in fact, in the hands of the student architect, in the training and critical acquisition phase, from “design aid” risks becoming “design aid” with all that follows. Students often let themselves be carried away by the facilities that software has to the point of adopting pre-established solutions that should be the object of conscious design. This leads to homologation and formalism.

The possession of a personal workstation, the always active connection via smartphone or computer, is an advantage above all from the point of view of teacher-student and student-student communication. The project material can be shared with the class group and easily shown and discussed in the presence of the students of the laboratory. The thing that was difficult was a criticism of the project which, going beyond the maieutics of words, allowed direct interaction with the project; in practice what is usually done by explaining itself with the same classic language of the project by tracing lines on the sheet to correct or integrate it.

The modernization of the teaching of the architectural project

On this aspect, at the time of the construction of the application (2017), we had set ourselves the goal of experimenting with the introduction of information technology during the design phases identified in the research path. In addition to the in-depth seminars and multiplier events, we had planned, in fact, two project workshops in the presence (one held in Bologna-Cesena and one held in Aachen). To solve the problem of drawing directly on the computer screen, we assumed the use of a monitor with touch functions and related digital pen (large enough to allow sharing in person) to allow “remote” reviews of projects by students not directly involved. The Workshop provided for the direct involvement of a limited number of students (6 per site for a total of 30 students plus 12 tutors) to be transferred to the two locations of the Workshops, the cities of Bologna and Aachen, while a higher number of students could follow the Workshop in its headquarters and make revisions to projects using this new equipment. In addition to this we had

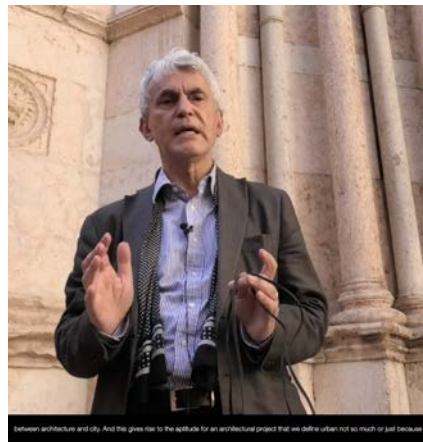


Fig. 03 Frame of the video-lesson edited by professor Carlo Quintelli

foreseen a platform for remote work identified in Adobe Connect, an Adobe Flash-based application that allows you to hold online meetings, serve as support for a teleconference, e-learning sessions, and collaborative content creation.

What has now become customary due to the Covid-19 pandemic, the ArcheA project had conceived 3 years earlier.

Although it was not possible to physically carry out the revision, during the Bologna Workshop (December 2019) a work session was tested in which the two Wacom interactive monitors were tested.

Aid of computer technology in teaching vs. new teaching methods

In Europe and in Italy in the universities involved in the partnership, since they are of a traditional “non-telematic” type, e-learning has never been very widespread and above all relegated to those humanities whose purely theoretical teaching allows an almost equal transfer of the program in e-learning mode.

The advent of the pandemic in the early months of 2020 and the consequent need not to interrupt studies (including university studies) has forced the adoption of systems for distance learning suddenly and often after courses have already begun.

Forced by the emergency and the prospect of lockdown, the different universities have relied on integrated solutions for the management of distance learning (known as platforms), the most popular of which are G-Suite for education, Office 365 Education, Zoom, Cisco Webex, Moodle.



Fig. 04 Screenshot of the multiple choice quiz useful to the student's learning check

Regarding the latter, Moodle, (acronym for Modular Object-Oriented Dynamic Learning Environment, an environment for modular, dynamic, object-oriented learning), the ArcheA project has produced a MOOC (Massive Open Online Courses), an online course open dedicated to a large number of users on research topics. Please refer to the article “The ARCHEA online Course on the themes of Urban Design. A teaching / learning educational path” by Lamberto Amistadi and Enrico Prandi in this manual.

Moodle (born in 2002 as a personal project of a researcher from Curtin University in Australia) is a very popular platform in university teaching due to its flexibility of use, while other systems widespread especially in the United States are Coursera: created in 2011 by two professors of Stanford University, EdX: created by the Massachusetts Institute of Technology and Harvard University. EMMA: created in 2016, it is a European-wide platform.

In the acceleration due to Covid-19, most teachers have looked for a viable way to transfer teaching online that they used to do in front of students a few weeks earlier, progressively refining the contents and methodologies.

If the Moodle platform - in Parma in use for some years with the name of Elly - was underused or relegated only to some aspects of university

teaching (for example the use of the calendar for events, for notices, communications, or the final delivery of works) has begun to be populated with video content, presentations, handouts, etc.

Furthermore, the provision of Microsoft Teams with the possibility of sharing the screen has made it possible to remotely transfer the usual review activities of the project in progress. Personally, after the first week of asynchronous reviews (the students uploaded the project drawings in PDF to Moodle and the teacher provided a review by writing or drawing directly on the PDF files or by inserting comments or notes) we started to carry out synchronous reviews using the same procedure made available by the Moodle “Task” module. A series of difficulties emerged immediately, including:

- the size of the screen (> 24-27”) is decisive for being able to see the drawings;
- the possibility of writing (or drawing) directly with the pointer is limited by the difficulty of writing with the mouse.

The second difficulty is adequately solved by placing a digital pen next to the mouse. The latter have now reached high levels of precision and represent an excellent solution. At this point, however, the question arises of how to draw or write with a digital pen. Many computers now have touch screens that also work with digital pens but are

very often of limited size: even tablets with touch functions (such as iPad or Microsoft Surface) rarely exceed 13".

To make the act of digitally drawing on the project possible, a large touch table-monitor would be needed (consider that often the architectural drawings are in ISO A1 or A0 format with consequent costs in exorbitant equipment).

Apart from the aforementioned costs, the solution described above has the advantage of replicating a project teaching methodology that has already been widely tested because it is the one that has always been adopted in architecture schools. In practice, we work with the traditional methodology on digital

sheets with digital pens.

So far we have considered teaching architecture design as a mere online transfer of what has always been done in the classroom.

We know, however, that real online courses are designed and designed for that purpose.

The experimentation is extensive as well as the available documentation that we report below.

Documents	Author/s	Purpose
UAccess_Learning Guidelines_for_eLearning_Content_Creators	University Information Technology	Provide information on the courses and the methodology
E-learning methodologies A guide for designing and developing e-learning courses	FAO Food and Agriculture Organization of the United Nations	Provide information on the courses and the methodology
Blended course design: a synthesis of best practices	Patricia McGee, The University of Texas; Abby Reis, The University of Texas	Provide best practices on course design
Provide best practices on course design	UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific	Provide information on ICT in education and training
Using ICTs and blended learning in transforming technical and vocational education and training	Commonwealth of Learning; Latchem, Colin	- augmented reality aid with web interface for the digitization of review processes
La didattica post-Covid	Fondazione CRUI. Laboratorio permanente sulla didattica. Gruppo di Lavoro sulla didattica post-Covid	Provide information on state of the arts on teaching (with glossary)
The State of E-Learning in Higher Education: An. Eye toward Growth and Increased Access	EDUCAUSE Center for Analysis and Research	
E-learning in European Higher Education Institutions	EUA. European University Association	

However, in the case of architectural disciplines and the project, the matter becomes complicated by virtue of the specificities that were emphasized at the beginning of this paper.

Many authors ask themselves serious questions about whether it is even possible in epistemological terms to teach architecture online.

Since the start of the Covid-19 pandemic, the number of reflection events (usually Webinars) on the topic

of online teaching in the field of architecture has undergone a decisive acceleration, demonstrating an attempt to modernize the teaching of the project and of its techniques albeit caused by the fear of new lockdowns.

Webinar/Seminar	Organizer		Link
What is good online learning in architecture?	AASA – Association of Architecture Schools of Australasia	Steven Feast (Curtin University) – Lessons From Existing Online Programs Dr Jason Crow (Monash University) – Virtual Environments: taking studios online Dr Mohammed Makki (University of Technology, Sydney) – The Conference Approach: application in teaching Elizabeth Strauss (Curtin University) – Engaging Students Online: overcoming separation anxiety. This session will be moderated by Professor Chris Knapp	https://aasa.org.au/news/188/aasa-webinar-what-is-good-online-learning-in-architecture
Online Learning and Teaching in Architecture			
Date: Friday, 3 April 2020 Session Time: 12 noon Melbourne/Sydney Time			

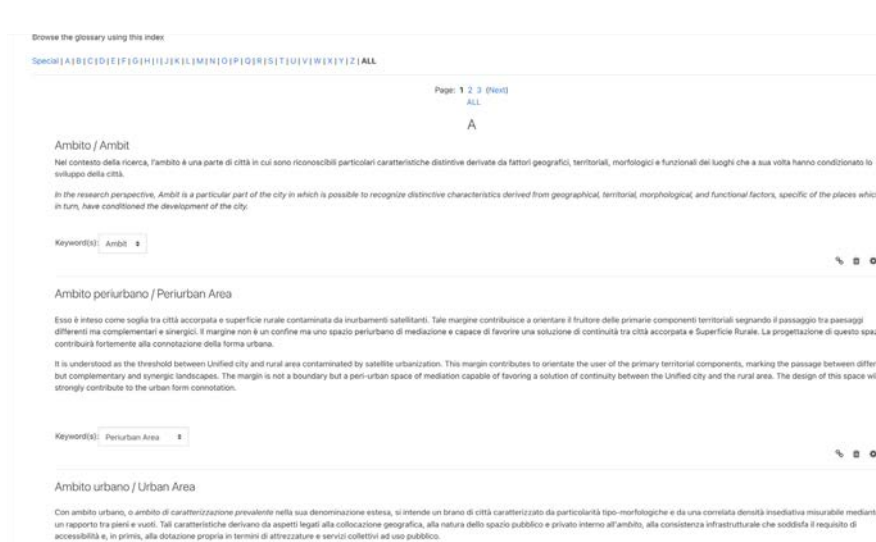


Fig. 05 Screenshot of page dedicated to the glossary into the ArchéA's MOOC

Teaching Architecture Online - Tools and Strategies	KTH-Royal Institute of Technology	Chairman: TODOR STOJANOVSKI (KTH, Royal Institute of Technology)	https://www.youtube.com/watch?v=C-RrVdFhDtg&fbclid=IwAR2cV3dGQXhgZ99zyk0ln6biSu5J3DnNb-
International synchronous online seminar		Presentations: KARL KROPF (Oxford Brookes University), Zoom for design tutorials: tools and management TERESA MARAT-MENDES (Lisbon University Institute), Teaching urban form through the lens of sustainability MARCELLO BALZANI & LUCA ROSSATO (University of Ferrara) Teaching architecture inside the point-cloud LAMBERTO AMISTADI (Bologna University), ArchéA: a blended circular teaching/learning programme ALESSANDRO CAMIZ (Özyeğin University), Aligning online review tools and learning outcomes GIORGIO VERDIANI (Florence University), From 1:1 meetings to team collaboration in CAD environments MALGORZATA HANZL (Lodz University of Technology), Increasing student's involvement in urban design FREDERICK BIEHLE (Pratt Institute), Simulating space and time with Google Earth TOM RANKIN (California Polytechnic University), Virtual walks in real places ELIAS SARANTOPOULOS (Özyeğin University), Custom tutorials, YouTube channel, peer-to-peer reviews	
Friday April 24th 2020, 16:00-19:30 (GMT+2:00)			
Kindly hosted by the KTH-Royal Institute of Technology ZOOM PLATFORM,			
Stockholm, Sweden			

Remote Teaching Workshops	European Association for Architectural Education - Education Academy Workshop (Education Academy)	WS1 2.00 pm Welcome and introduction to the workshop Johan De Walsche (EA main coordinator – University of Antwerp) Michela Barosio (Politecnico di Torino) FIRST SESSION: TOOLS FOR THE REMOTE ENTRY 2.15 pm A virtual abecedarium as cultural project at the basis of the Schools of Architecture in the distance learning. Pasquale Mei, Giorgia Carpi, Antonio Ingrassia, Ilaria La Corte, Elisa Pegorin Corso di Laurea Triennale in Progettazione dell'architettura Politecnico di Milano 2.30 pm A basic design studio experience in Minecraft education edition Aktan Acar, TOBB University of Economics and Technology, Department of Architecture, Ankara 2.45 pm Collective discussion 3.15-3.30 pm Break SECOND SESSION: APPROACHES TO REMOTE ENTRY 3.30 pm Spaces of Sounds İpek Avanoğlu, PhD, Sevgi Türkkan, Istanbul Technical University Faculty of Architecture 3.45 pm The beginning is mental, while the approach is personal Dr. Mohamed Sobhy M. Ibrahim Faculty of Architecture, Design and Built Environment, Beirut Arab University 4.00 pm Tout est projet. Integrating design principles in a 1 st-year online Design Studio: tools and methods Santiago Gomes, Rossella Gugliotta Politecnico di Torino 4.15 pm Collective discussion 4.45 pm Final Wrap-up Michela Barosio (Politecnico di Torino)	
The EAAE Education Academy launches a new series of three workshops focused on architectural design remote teaching issues.			
WS 1. 05.02.21, 2pm to 5pm CET (GMT+1) – Remote entry: First year experience (Moderator Michela Barosio)			
WS 2. 05.03.21, 2pm to 5pm CET (GMT+1) – Working alone, together: Organizing Group work (Moderators Mia Roth-Čerina)			
WS 3. 02.04.21 Judging from a distance: Final Jury and assessment (Moderator Patrick Flynn)			

		<p>5.00 pm Announcement of the next workshop</p> <p>WS2</p> <p>2.00 pm Welcome and introduction to the workshop</p> <p>Johan De Walsche (EA main coordinator – University of Antwerp)</p> <p>Mia Roth-Čerina (Faculty of Architecture, University of Zagreb)</p> <p>2.15 pm Session 1: COLLABORATIVE PLATFORMS</p> <p>Somewhere between a message and a medium: On transferring a design studio to an online learning environment: MIRO and the Incipient Raum</p> <p>Tomas Ooms</p> <p>Faculty of Architecture KU Leuven, Campus Sint-Lucas</p> <p>Serendipity and collective creativity in times of remote teaching: How to offer multiple teaching modes within and without a digital screen</p> <p>Milena Metalkova-Markova</p> <p>Porstmouth School of Architecture</p> <p>2.45 pm Discussion</p> <p>3.05 pm Break</p> <p>3.15 pm Session 2: OFF THE BEATEN PATH</p> <p>Far away, so close</p> <p>Riva Lava</p> <p>School of Architecture, National Technical University of Athens</p> <p>Out of the box: Explorations in Ocean Space</p> <p>Nancy Couling (Architecture) and Prof Vibeke Jensen (Art)</p> <p>Bergen School of Architecture</p> <p>The Art of Creating an Effective Online Collaborative Design Charette</p> <p>Nuala Flood and Alice Clancy</p> <p>NF – Queen's University Belfast; AC – University College Dublin</p> <p>4.30 pm Session 3: NEGOTIATING DIALOGUE</p> <p>The Neighbourhood 2020</p> <p>Sevgi Türkan and İpek Avanoğlu</p> <p>İstanbul Technical University, Faculty</p>	
--	--	---	--

There have also been many reflections published by scientific journals in the field of architecture as can be seen from the table below.

Documents	Author/s		Purpose
Reconceptualizing the design studio in architectural education: Distance learning and blended learning as transformation factors	Marta Masdeu Josep Fuses	International Journal of Architectural Research	
A Blended Learning Approach to the Teaching of Professional Practice in Architecture	Lindy Osborne, Queensland University of Technology		
Coronavirus Città Architettura. Prospettive del progetto architettonico e urbano / Coronavirus City Architecture. Prospects of the architectural and urban design	Carlo Quintelli, Marco Mareto, Enrico Prandi, Carlo Gandolfi, Università di Parma	FAMagazine. Research and Projects on Architecture and the City. Monographic Issue	Provide information on the experiences of teaching architecture online (33 experiences)
The Place of E-learning in Architectural Education A Critical Review	Nawara Mizban, Andrew Roberts Cardiff University	eCAADe 24	
E-Learning in Architecture Professional and Lifelong Learning Prospects	Juvancic, Matevz; Mullins, Michael; Zupancic, Tadeja Aalborg Universitet	E-Learning-Organizational Infrastructure and Tools for Specific Areas	
Evaluation of the online teaching of architectural design and basic design courses case study: College of Architecture at JUST, Jordan	Anwar F.IbrahimAhmed S.AttiaAsma' M.BatainehHikmat H.Ali Jordan University of Science and Technology, College of Architecture and Design	Ain Shams Engineering Journal	
The Tutors' Views on the Utilization of E-learning System in Architectural Education	Sidawi, Bhazad	European Journal of Open, Distance and E-Learning	
Architecture and Instructional Design: A Model for E-Learning	Elena Kays, Art Institute Online, United States	E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education	
E-learning for architecture	Rosalba Belibani, Stefano Panunzi	Gangemi Editori	
Is Online Learning Really the Future of Architectural Education?	Ross Brady		

E-learning-Oriented Software Architecture Design and Case Study	Peng Lu, Xiao Cong, Dongdai Zhou Northeast Dianli University, Jilin, China. Northeast Normal University, Changchun, Jilin, China		
---	---	--	--

In addition, through the specific call for papers “best practices for a blended flexible training activity in architecture for higher education institutions”, we have selected additional cases.

Documents	Author/s
A Distributed Virtual Learning Environment (DVLE) for a Constructively Aligned Architectural Design Studio	Alessandro Camiz
Virtual and Parallel Exhibitions in Urban Planning Teaching. Conclusions from the use of augmented and virtual reality	Tomasz Bradecki
Virtual exhibition for design workshops. Some experiences at DiARC_ University of Naples “Federico II”	Renato Capozzi
Teaching drawing in a shared community	Laura Carnevali, Fabio Colonnese
Distance learning of designing high-performance, sustainable, intelligent buildings at the Faculty of Architecture of the Silesian University of Technology	JDariusz Masły
An Alternative Approach to Teaching Architectural History: Redrawing the Pedagogical Boundaries between Architectural History and Design Studio with Flexible and Blended Methods	Renata Jadresin Milic, Catherine Mitchell
Evaluation of the current situation of distance education, with reference to the own academic practice	Anna Kossak
Design and implementation of online learning process for complex architectural projects: a graduation project example during Covid-19 period	Özlem Erdoğan Erkarlan, Yenal Akgün
Architectural Design Studio activities in times of pandemic. Alternative models and tools for managing mixed-mode teaching	Veronica Ferrari
The architectural plan: Teaching and learning methods in social distance's times	Donatella Scatena, Zeynep Gulel, Sergio Amedeo Terracina, Virginia Volanti
Rarefied atmospheres	Esther Giani
International distance learning design experiences. Above the clouds, a project for a temporary event in the Bolognetta valley	Renzo Lecardane, Paola La Scala, Bianca Andaloro
Changing the Curriculum in Architectural Education: the Case of the Trans-African Dialogues Series	Maria Panta, Joseph Agyei Danquah
Beyond the screen	Antonino Margagliotta, Paolo De Marco, Sete Álvarez Barrena
BECC Laboratory in Tokyo. Urban landscape, urban regeneration. Interdisciplinary academic class	Olimpia Niglio, Tsuneaki Fukui
Distance teaching of the history of architecture and urban design?	Camille Bidaud

Growth Opportunity: Transforming Studio-Based Education through Digital Tools during the Global SARS- CoV-2 Pandemic at the University of Florida	Bradley Walters
Reinventing the pedagogy: about architectural and urban utopias. The experience of teaching the humanities and social sciences in a school of architecture during a pandemic.	Milena Guest, Roula Maya, Antonella Di Trani
Experimenting with a multi-partnership educational project in Cherbourg-en-Cotentin (in the department of la Manche, France)	Marie Chabrol, Anne Portnoi, Gabriella Trotta-Brambilla
ArchéA and the pandemic: the Cesena Campus experience	Lamberto Amistadi
The ArchéA online Course on the themes of Urban Design. A teaching/learning educational path	Lamberto Amistadi, Enrico Prandi
Design in the Time of Corona. An Experience Report	Timo Steinmann
Experiences with digital teaching formats during the COVID-19 pandemic at the Department of Spatial Design at the Faculty of Architecture, RWTH Aachen University, as illustrated by the course “Einführen in das Entwerfen” (Introduction to Design)	Felix Mayer
Blended training activities in on-line and on-site exploration of the urban structures	Michał Stangel
Didactics, seminars and workshops in virtual environments. UNIPR experience in teaching architecture	Paolo Strina
From pencil to mouse, from face to screen. A teaching experience in times of Covid 19	Pierre-Antoine Sahuc

An experimentation of the ArcheA Online Architectural Workshop: Aachen Case study

We have already said how ArcheA had foreseen in its development two Architectural Design Workshops to be held in person. The structure of the Workshop applied to architectural design¹ consists of an intensive design activity conducted, in a limited time (on average one week), by groups of students led by the managers (tutors and teachers). The continuous dialogue between students and teachers is the basis of the workshop activity which also includes moments of exchange of ideas, opinions, between the different groups².

In reflecting on the relationship between new technologies and teaching of the architectural project, the ArcheA project envisaged the purchase of computer equipment (graphic tablets / digital blackboards) by the various participating units that would facilitate the remote review of the activities design of the Workshops. The digital instrumentation was tested through some technical tests held between the research groups of the University of Bologna and the University of Parma. The Covid-19 emergency has imposed a change of program which in the ArcheA project was taken as a further unforeseen experimentation regarding the methods of remote project review resulting from the impossibility of being able to carry out the

second Architectural Design Workshop (Aachen, November / December 2020) in the usual way (i.e. in presence).

Instead of in the same place (or in relatively close places) the students and teachers of the Workshop, unable to move due to the limitations imposed by the emergency, participated through the Teams platform by connecting to the virtual general room of the Workshop: in turn the latter it contained 5 virtual rooms (classrooms-laboratory) to allow the work of the groups constituted by the respective universities to which they belong.

Project presentations and collective critical discussions were held daily in the virtual general room.

Although not in ideal conditions, this made it possible to complete the program envisaged by the candidacy.

Teaching Architecture Online: Development Prospects

As is known, in the period of city lockdown, Higher Education never adopted forms of distance learning based on sharing platforms (Microsoft Teams, Google Meet, Skype, etc.) mostly designed to allow remote meetings. In many universities, teaching on the project was conducted through these platforms, often

with the help of other platforms (Moodle). A so-called asynchronous phase has passed to the so-called asynchronous phase in which teachers and students within the same class team have had the opportunity to interact simply by sharing the screen.

This is very far from designing a course directly online, probably based on differentiated and optimized teaching methods to ensure fluid learning. View the particularities that characterize the teaching of the project a huge step has already been taken even to those who do not have the opportunity to learn to design. To date there are many university initiatives³ (working groups, commissions, etc.) in which

we try to reflect on how to modernize the teaching of the project.

For the future, the University (traditional, the so-called in presence), the elective place for the search for advanced solutions, will be able to open spaces for reflection on how to set up the teaching of the project in such a way as to combine the advantages of the one (traditional) and of the other (online) method.

Architectural Design Workshop C3

(Aachen, 21-30 November 2020)



© Stadt Aachen, © BildsatRegion Aachen, © Land NRW, © OpenStreetMap Contributors

Announcement of the selection of no. 30 students enrolled starting from the Third year of the Master's Degree in Architecture who wish to take part in the Workshop entitled **Redesigning the medium-sized European city. The Driescher Hof in Aachen's periphery**, which will be held in Aachen, Germany from the 21 to 30 November 2020.

The Workshop, which will see the participation of a total of 30 students (6 from the Master's Degree in Architecture of the University of Bologna – Cesena Campus, ITALY, 6 from the Faculty of Architecture of RWTH Aachen, GERMANY, 6 from the Faculty of Architecture of the Silesian University of Technology, POLAND, 6 from the Master's Degree in Architecture of the University of Parma, ITALY, 6 from the Ecole Nationale Supérieure d'Architecture de Normandie, FRANCE) will be carried out in English and will involve a project for a defined area of the city of Aachen.

Fig. 06 Presentation of the Aachen's Workshop on the Archea's website

Notes

¹ For a further explanation see the monographic issue of FAM e-Journal entitled *Intensive Teaching for the Project* (No 26, 2014): dedicated to the intensive teaching of the project. Available at <https://www.famagazine.it/index.php/famagazine/issue/view/20>

² Our experience is based on the conduct of two LLP-IP - Intensive Programme Erasmus held in Parma in 2012 and 2013 by title COMPACT CITY ARCHITECTURE. See E. Prandi. - 1(2012), COMPACT CITY ARCHITECTURE. Historical city centre design in Europe / FAEdizioni pp. 1-92. E. Prandi. - (2014), COMPACT CITY ARCHITECTURE. Designing Centrality, regenerating the suburbs / L'architettura della città compatta. Progettare centralità, rigenerare le periferie / FAEdizioni pp. 1-120.

³ The writer was a member of the Innovative Didactic Commission of the Department of Engineering and Architecture of the University of Parma. Similar commissions work in almost all Italian universities.



Enrico Prandi - (scientific coordinator of the Parma local unit), Associate Professor in Architectural and Urban Design, is departmental referent for Erasmus+ activities. Since 2010 he has been Erasmus + delegate for Architecture courses and in 2012 and 2013 he participated in the CCA project (LLP-Intensive Programme).

He is director of the Festival of Architecture, that organizes events (exhibitions, conferences, seminars, etc.) for the dissemination of architectural and urban culture. He is Director of the Open Access Scientific e-Journal FAMagazine. Research and Projects on Architecture and City (ISSN: 2039-0491, Scopus and WoS indexed, www.famagazine.it), Placement and Internationalisation experts, Urban Design Expert. His publications include: *L'architettura della città lineare* (FrancoAngeli, Milan 2016); "The Architectural Project in European Schools" (in *European City Architecture*, FAEdizioni, Parma 2012); *Mantova. Saggio sull'architettura* (FAEdizioni, Parma 2005).

Analysis of the Best Practices

Guest professors

Alessandro Camiz

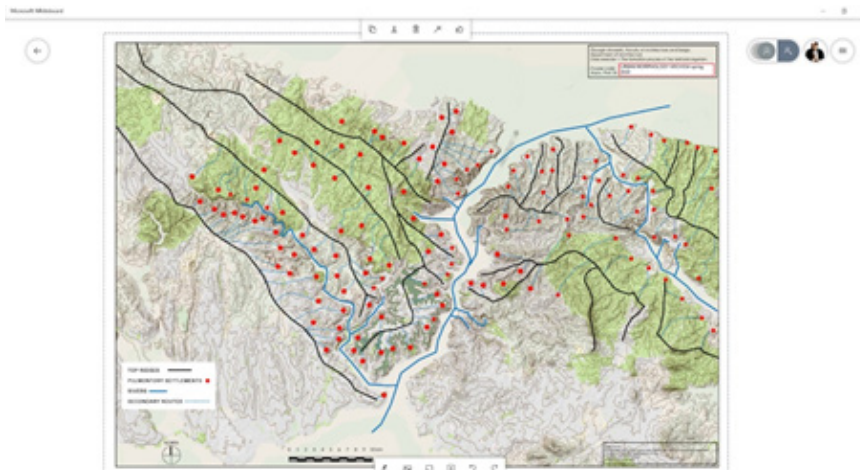
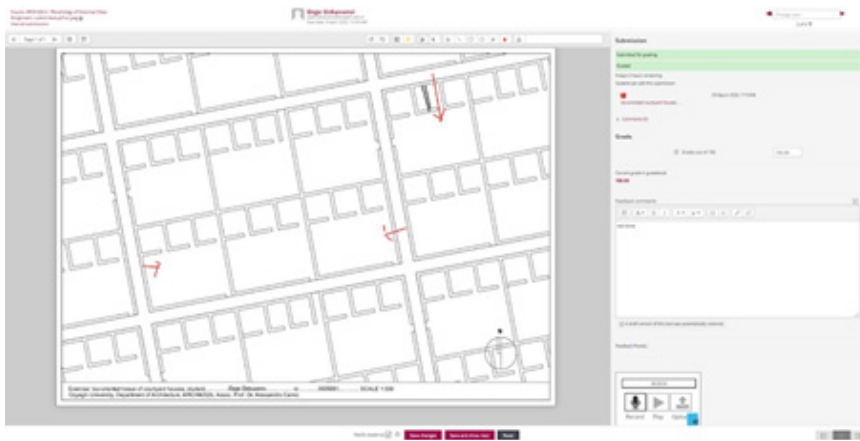
**A Distributed Virtual Learning Environment (DVLE)
for a Constructively Aligned Architectural Design Studio***Ozyegin University, Turkey*

Fig. 01 Moodle integrated annotation plugin, available on the grade function of the assignment module
Fig. 02 Microsoft Teams integrated with the Microsoft Whiteboard

Abstract

In the last 30 years there has been extensive research about online teaching, outlining the importance of the interaction modes and the constructive alignment of the intended learning outcomes (ILO) and the teaching and learning activities (TLA) (Shuell, 1986), (Houghton, 2004), (Laurillard, 2012), (Biggs and Tang, 2011). Nevertheless, the literature about online teaching for architectural design is quite scarce and seems to ignore the recent findings of pedagogy (Rongrong, Gu, Skates and Feast, 2021), (Quintelli, Maretti, Prandi and Gandolfi, 2020), (Bologna and Trisciuglio 2020). In order to update our syllabi for online teaching during the pandemics we established a dedicated research unit, named “Online Architecture”, at Özyeğin University, (Camiz, Verdiani, Özkuvancı and Alak, 2020). Therein we tested several online tools that could be used to constructively align the teaching and learning activities (TLA) and the intended learning outcomes (ILO) of our online architectural studios. After selecting the proper tools, we aligned them with the ILO and deployed them within a Distributed Virtual Learning Environment (DVLE). This paper illustrates the finding of such a research unit and describes the applications of the DVLE in the architectural design studios for the years 2020-2021.

Keywords

Architectural composition — conversational framework — constructive alignment

«For just as in a person with a trained memory, a memory of things themselves is immediately caused by the mere mention of their places»

Aristotle, Topica, 162, 24-30.

Constructively aligning the ILO and the TLA

Teaching should be considered as a recursive activity: you teach others, but by doing so you learn from them, you evaluate students, but by doing so you inevitably end up evaluating yourself. The action of planning, should therefore simulate beforehand this process and help each course to improve every semester, tending constantly towards perfection. In the last 30 years there has been extensive research on how to teach online, outlining the role of the different levels of interaction and the advantages of the constructive alignment of intended learning outcomes (ILO) and teaching and learning activities (TLA) (Shuell, 1986), (Houghton, 2004), (Laurillard, 2012), (Biggs and Tang, 2011). Within architectural design the alignment of outcomes, activities and assessment is somehow different from other fields. Maybe the closest one is that of writing, or musical composition. Since architectural composition is meant to produce the drawings and models representing an architectural project, and is a synthetic intellectual activity, its pedagogical approach should differ from the one used in other disciplines. Considering the teaching of architectural design online, the literature is quite scarce, at least it was in March 2020 when the Faculty of Architecture and Design of Özyeğin University decided to move online all the designs studios. So we entered a relatively new field, open for discussion. All the courses I taught in the past

5 years have been following a blended model, using Moodle for most of the online parts, the homework submissions, the final submissions, to share literature and cartographic data with students, and finally to notify the grades to the students. Now, with the 100 % online model we were forced to follow, the novelty were the online lectures, which are not particularly different from live ones, and (talking about architecture) the online juries and reviews. In a word the collective synchronous online assessment of projects (drawings and models), with visual drawn feedback (review). Now doing this activity online was new, but it is a form of assessment, and indeed it is the core of the teaching in a design studio.

When Özyeğin University decided to move online all the courses in March 2020, we had just one week of time to update the syllabi and to set up the online teaching platform. At that time there was no extensive published work on how to teach an architectural design studio entirely online. Besides referring to the existing literature for the general pedagogy of online teaching, we established a dedicated research unit “Online Architecture” within the Dynamic Research on Urban Morphology-DRUM laboratory, in cooperation with the Dida Labs of University of Florence (Camiz, Verdiani, Özkuvancı and Alak, 2020). Therein we tested several online tools that could be used to constructively align the teaching and learning activities (TLA) and the intended learning outcomes (ILO) of our online architectural studios. After testing them we experimentally deployed them within the Distributed Virtual Learning Environment (DVLE). Our aim was to build an online system capable of a productive and healthy studio experience, remembering that an architectural studio, as the name suggests, should be more a professional studio than an academic classroom, or at least a classroom teaching the students how to be professional architects. From that first theoretical premise, we extensively selected digital tools and tested them within our classrooms and summer schools, always revising them upon the feedback that we could collect from the students, and after 4 semesters, our studio environment is now suitable of publication as the results ended up being better than those obtained with in presence studios in the past in the same university.

Different tools for online design reviews (formative assessment)

We opened a Microsoft One-note notebook dedicated to the research group and therein it was possible to discuss and share different options for the online reviews of architectural drawings. The systematic need of reviewing visual materials is indeed the main difference in online teaching between architectural design studio courses and the other disciplines. We tested a number of different digital tools of the formative assessment of drawings for an entirely online architectural studio (Tab.1).

The comparative table above illustrates only a few of the many tools we tested and compared. At the end of a testing phase, carried out with the help of some graduating students, we ended up selecting the Google Jamboard as the best option for the formative assessment. Within the reasons for the choice was that it is free, whereas we had to pay for some of the other good candidates, also Jamboard is included in Google Educational Suite, and Özyeğin University has a subscription to it. Finally, it did what we needed it to do: freehand annotation of drawings online. We should say that at that time, Google Jamboard had not yet been activated by the system administrator, so we asked them to activate it and they did. Then we tested it extensively before finally adopting it in the classroom. We have been using it since then for the formative assessment (reviews).

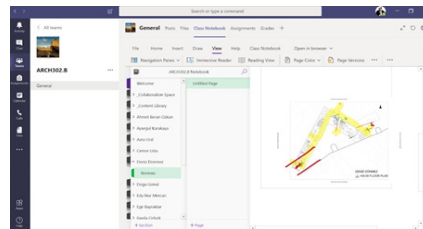


Fig. 03 Microsoft Teams integrated with Microsoft One-note class notebook

Tool	Notes	Potential	Weaknesses	URL
Moodle integrated annotation plugin	(OZ LMS) on the grade function of the assignment module of Moodle	Free, Integrated into OZ LMS (Moodle platform), allows feedback to students	Only on PDF submissions, not shareable outside of the classroom	https://moodle.org/plugins/assignfeedback_editpdfplus
Microsoft Whiteboard	Integrated into Microsoft Teams	Interactive, only drawing, shareable	Free. Cannot be recorded, cannot upload JPG or PDF files	https://docs.microsoft.com/en-us/microsoftteams/manage-whiteboard
Microsoft One-note class notebook	Integrated into Microsoft Teams	Free, integrated into Microsoft Teams, highly interactive, drawing, text, colours, shareable online	Cramped GUI, zooming is difficult	https://support.microsoft.com/en-gb/office/use-onenote-class-notebook-in-teams-bd77f11f-27cd-4d41-bfbd-2b11799f1440
Google Classroom integrated comment form	Integrated in Google educational suite, available on the assignment module	Free, integrated within the Google class environment	Comments limited to text and coloured boxes	https://support.google.com/edu/classroom/
Google Jamboard	Integrated in Google educational suite	Free, highly interactive, drawing, text, colours, shareable online, exportable to PDF	Limited to 20 pages	https://gsuite.google.com/products/jamboard/
Online Whiteboard for Realtime Visual Collaboration AWW	Now converted in Miro, see below	Highly interactive, drawing, text, colours, shareable online, exportable to PDF	Paid, free limited trial	https://awwapp.com/
Miro	The online whiteboard for easy collaboration	Highly interactive, drawing, text, colours, unlimited canvas, shareable online, exportable to PDF	Free plan with unlimited team members	https://miro.com/
Belkin Stage pro	OS and Android APP	Highly interactive, drawing, text, colours, camera, recordable	Paid	https://apps.apple.com/us/app/stage-pro-by-belkin-for-ipad/id714477455

Tab. 1 Pros and cons of different formative assessment digital tools, constructively aligning the TLAs of an online architectural design studio (Camiz, Verdiani, Özkuvancı and Alak, 2020).

Online modes of interaction and the artistic mode of production

Incorporating multimedia activities into online courses is essential to the teaching and learning process for two main reasons. Firstly, because it adds some colour, motion and sound to the online pages, making them more communicative than simple book pages. Secondly because it increases the interaction within the class. The different modes of interaction are one of the foundation stones of the teaching and learning process. The six modes of interaction, student-teacher; student-content, student-student, teacher-student, teacher-content, teacher-teacher (Anderson, 2003) may be considered the core of distance education, and are indeed all very useful to the teaching and learning process. The use of interactive multimedia objects can therefore bring online teaching much closer to the pedagogical effectiveness of onsite teaching. Additionally we must carefully consider not only the technicalities of multimedia content and of the corresponding tools, but also how each tool and content constructively aligns with the learning outcomes of the course.

Dealing with architecture, most of the teaching activity involves images in both vector and raster formats, and eventually videos. These formats, differently from text, occupy a whole lot of the available bandwidth, and in the case of long online meetings with large numbers of students, lead to the slowing down and often to the crash of the teaching platform. This specific character is shifting the

teaching style towards a written and spoken approach in design, which is dramatically easier and faster when going across the internet. But in our opinion this tendency is not increasing the quality of the design and of the teaching. On the contrary we experimented successfully different whiteboard programmes to implement a cooperative drawn approach to the design/review process.

It was indeed quite effective in increasing the interaction during the lessons. According to recent pedagogical studies, the different interaction levels should be considered the cornerstone of teaching as a whole. But when it comes to online teaching interaction becomes the most important factor (Anderson, 2003). There is extensive research on how to establish interaction tools within the online teaching platform. But for the field of architectural design, which is quite different than teaching math or history the research is still in progress. We went through the existing literature and we couldn't find much. In the field of architectural design, the point is that architects do design and they do that with a pencil. And even though today some digital tool might have replaced the pencil itself, hand drawing still plays a very important role. But besides drawing with the pencil or with the computer, in a professional studio there usually is a continuous process of review of the drawings, which is typical of the *artistic mode of production*. So you make drawings, then you print them on paper and put them on the table, where with a pencil over a piece of tracing paper, you can annotate, change and

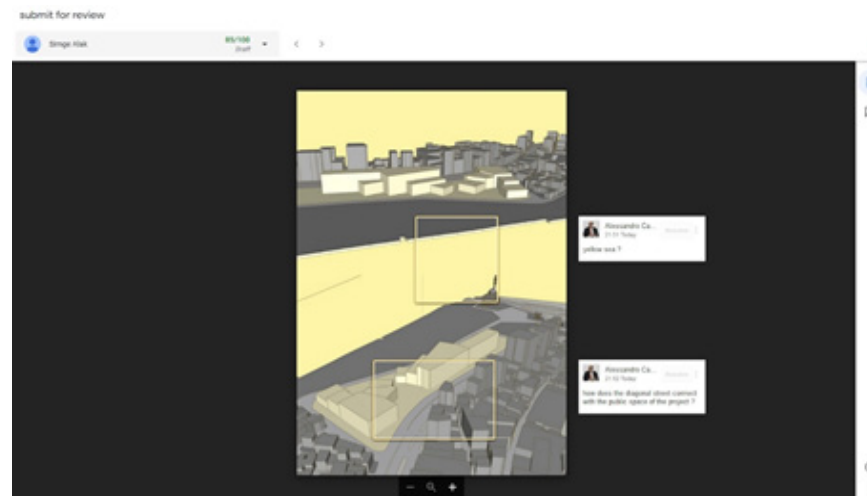


Fig. 04 Google Classroom integrated comment form, available on the assignment module.

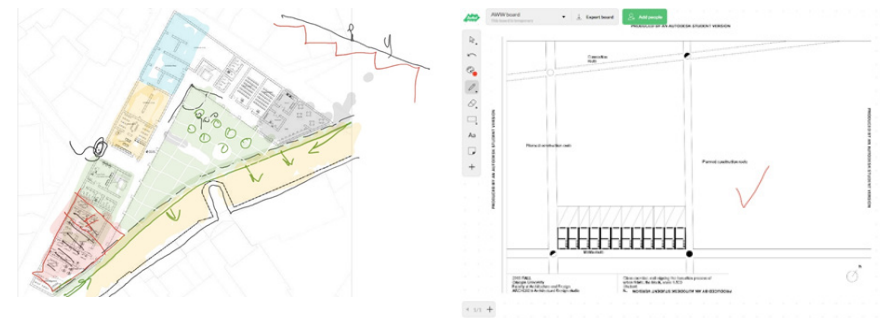


Fig. 05 Google Jamboard, best online digital tool for formative assessment in an online architectural design studio.

Fig. 06 Online Whiteboard for Realtime Visual Collaboration, now converted into Miro

review them. Usually we simulated this *artistic mode of production* in the classroom where students printed on paper the drawings, and after pinning them on a wall, we could draw our annotations on tracing paper. This process of continuous review is what we need for teaching architectural design. When the studio moved online, we had the desk (the online conference system, Teams or Zoom), but we didn't have the pencil, and needed a replacement for that. We needed what technically is called an online shared whiteboard: a place where you can upload a JPEG and then the teacher as well as the other students can draw freehand and annotate the comments. In my opinion, comments should not be philosophical, but rather alternative architectural forms, traditionally drawn on the paper, and now drawn on an online white-board. Our studio courses are scheduled twice a week for a total of 10 hours a week. This continuous review process was deployed for some 70% of that time, with the remaining time being dedicated to lectures, tutorials, sketch exam and juries.

Online tools for summative assessment (juries)

Before the pandemics my syllabus was structured with 3 juries, when we went online I revised it to 5, 4 intermediate and one final, all with external members. For this activity we used the Miro platform, so that jury members as well could make drawn comments, but as a summative assessment it was more formal than the other formative assessment reviews. Because of the substantial difference between Miro and Jamboard. The latter can be considered the equivalent of a journal, with maximum 20 pages. Miro is instead the equivalent of a pinup wall. It has an infinite canvas and you

can upload hundreds of drawings and annotate each one. So when we consider the studio jury, we got 15 students, each one of them has 8 drawings and there are 5 juries in total. We are talking about over 600 drawings, and they can be all in the same place so that people can go there with the digital pencil and make annotations. This is a very simple tool, maybe complicated to explain using words, but quite simple to draw, and indeed it was very effective in increasing the teacher-student interaction, but also essential to the design process. As far as I know, architectural design is done with the pencil at hand. But if you want to do it online, you need a digital pencil and you need to share what you're doing on the screen. So it is like drawing on the blackboard in the classroom where students are seeing what you're doing, with the main difference that students can now draw as well. So if I should compare this online way of working with the traditional one, the online way has the advantage that everyone can interact in the same way, not only the teacher. I see this as an advantage in terms of how much the student is engaged and interacts with the teaching and learning activities. If we will go back to onsite teaching, I will probably still use this interface because it allows students to interact on-screen with the project, and all the class can take advantage of the review. Again, interaction should be considered the basis of teaching and teaching.

The Distributed Virtual Learning Environment (DVLE)

During our intensive blended summer school in Italy courses¹ we used Google classroom instead of Moodle because some of our international students don't know that platform, and in ten days

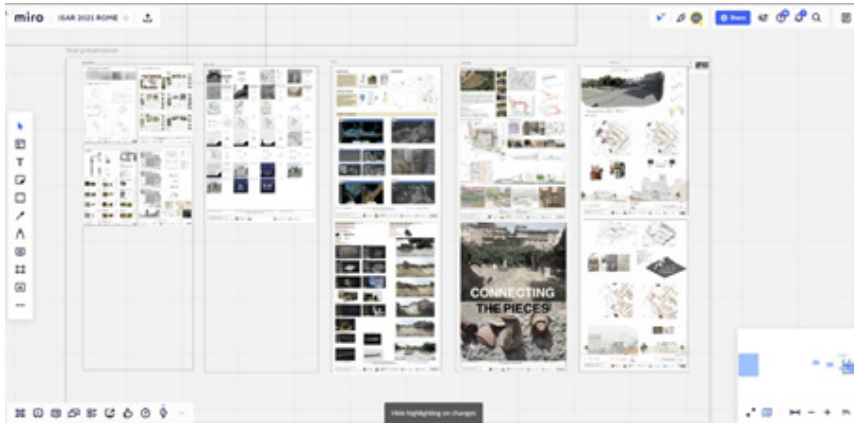


Fig. 07 Miro, best online digital tool for summative assessment in an online architectural design studio.

they don't have enough time to get acquainted with a new system. Google classroom is instead very simple to use for some purposes, and it has a high level of integration with all the other parts of the Google educational suite, such as Google Drive, email, calendar notes, keep and other external tools such as Padlet, Coursera, and Facebook etc. So as you see, we have a number of tools available. I mentioned Miro, the Google Jamboard, Moodle Learning Management System and others. We tried to put them all together in the same place, so that each one of them is taking a little piece of the *pedagogical purpose*, integrating it with the online face to face synchronous meeting, which we always record and make available asynchronously for those students that on that day we're not able to attend live. (Fig. 09). In the regular semesters and then in the summer school programmes we also experimented successfully an *online cafeteria*, a meeting platform where students could interact at any time and day, without the teacher being present. Our social purpose was to provide students the feeling that they were in presence when attending online. The university is not only including the classroom environment, but also the library, the laboratories, the department offices, the campus open spaces, the cafeteria, the park and the refectory, even the corridors. In a nutshell all those spaces where students and teachers interact full time are part of an academic environment. But when we went online we didn't have that environment anymore, so it was necessary to replace those spaces with online ones, even though it was not possible to replace them entirely, a substitute was needed. So we thought

of a cafeteria, a meeting platform where students could go at any time even without the teacher being present: a permanent space available for the students to interact, in the classroom and outside of the classroom. In the first year of experimentation (2020) we implemented that with Google meet: at that time it allowed us to schedule on google calendar a meeting with selected invitees so that they could join at any time without the owner of the meeting being present. It was basically a Google meet meeting scheduled on Google calendar for a number of days, and having as invitees the emails of all the students in a classroom. At that time, students were able to join at any time without the owner of the meeting being present. Once a student was inside, he could also admit people from outside the classroom. So if he wanted to meet his friends there, he could as well. This year (2021) we discovered that Google changed the policy for Meet, only emails belonging to the same domain of the owner of the meeting can join the meeting without being admitted. So google meet became suddenly ineffective because our staff has @ozyegin.edu.tr emails, while students do have @ozu.edu.tr. Therefore students, even though invited to the scheduled event on the calendar, needed to be admitted by the owner of the meeting. I don't know why they changed that, with no notice at all. So we had to change platform, now we are using zoom to implement a cafeteria. It is possible to schedule a meeting for a number of days, weeks, months, so that it can be joined by anyone, without the host, the owner of the meeting, being inside. This space is providing a place for informal interaction between

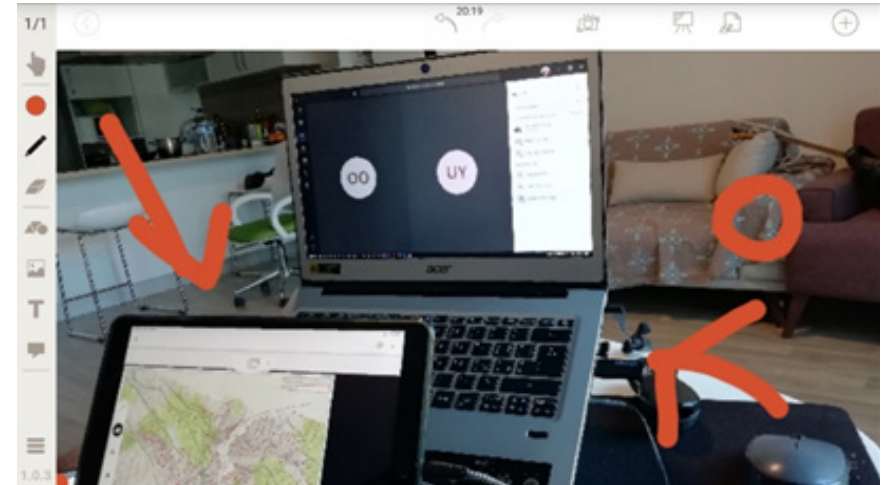


Fig. 08 Belkin Stage pro, versatile for operating with 3D models using pictures and videos.7

Fig. 09 A. Camiz, Distributed Virtual Learning Environment (DVLE) key-plan, 2nd ISAR International blended Architecture Summer School in Castelveccchio Calvisio, Abruzzo, Italy. June 16-25, 2021

students of the classroom and of other classrooms. In the past semester, I adopted the same Cafeteria for ARCH302 and ARCH402, plus an elective course ARCH452 and a master course ARCH610, with a total of 50 students that could go there. We shared that same space with our international summer programmes with over 100 more students, so at the end there were 150 students that potentially could meet there. And we ended up very often with friends, colleagues and students, to meet in the bar with no need of scheduling the meeting. It also happened several times that somebody went there to talk with somebody and found someone else already inside. When you go to the bar, you often meet other people. That was very fascinating. I'm an architect, and I designed before university spaces in my professional history, but suddenly I found myself having to design a virtual teaching environment. We listed several tools, such as Miro, Padlet, Google Drive, Meet, Google, Jamboard, Zoom, Moodle, Google classroom, Panopto. So we are talking of over 10 online tools for each class. Students and teachers often find themselves dealing with 4 classes adding up over 50 different links to memorize. This labyrinth environment is extremely unfriendly and very easy to get lost into. For this reason I adopted a very simple plan of the Distributed Virtual Learning Environment (DVLE), showing all the different URLs as equivalent to spaces inside a building. So that you have the entrance, the library, the office, the classroom etc. Each one of these spaces is associated with an online digital tool such as zoom, google meet, google drive, the learning management system (Moodle). All was drawn on a PDF file with little coloured boxes, each box represented as a room and clickable. So all you need to do when you are moving around in this learning environment is to click on the link to go there. We gave each room a person's name, we didn't call them Zoom or Google meet, but "Cesare Brandi" or "Sedad Hakki Eldem". We gave people names to each space following the ancient mnemotechnic suggestion provided by Giordano Bruno (1582), by associating objects to rooms or persons, it will be easier to remember them.

Conclusions: architectural design "per locos"

Student collaboration is essential to the teaching and learning process, according to the conversational framework (Laurillard 2012) it is one of the six types of learning. Therefore student collaboration should not be considered as a convenient social practice but rather as an integrating part of the learning process. But moreover, now looking at the field of architectural design, a faculty of Architecture is supposed to teach students how to be architects, not philosophers, not musicians, but architects. What do the architects do? They do projects, they make drawings for projects and then they build them. So teaching architectural design may benefit greatly from the adoption for online digital tools capable of creating the proper environment to revise those drawings systematically in order to improve them following the *artistic mode of production*. The last picture we are including in the paper as a figurative conclusion (fig. 10) is a 10 days project done during the 2nd ISAR International blended Architecture Summer School in Castelvécchio Calvisio, Abruzzo, Italy. June 16-25, 2021, and utilizing the very DVLE illustrated in fig. 09.



Fig. 10 Tutors: Alessandro Camiz, Özge Özkuvanci, Louai Al Hussein, Nariste Ibraeva, Yannick Mugenzi: Students: Alara Bilgen, Haneen Khalil, Yağiz Eray Esgin, Ceren Gezer, Hebatollah Alhamid, Hanan Alahmad, Rahaf Shabban, Project for Anti-seismic social housing in Castelvécchio Calvisio, 2nd ISAR International blended Architecture Summer School in Castelvécchio Calvisio, Abruzzo, Italy. June 16-25, 2021.

Notes

¹ 2nd ISAR Online International Summer school of Architecture, Castelvécchio Calvisio, (L'Aquila, Italy) (16-25 July 2021); 2nd ISAR Online International Summer school of Architecture and Archaeology, Horrea Agrippiana, Roman Forum, Rome, Italy (18-27 June 2021); 1st ISAR Online International Summer school of Architecture, Castelvécchio Calvisio (17-27 July 2020); 1st ISAR Online International Summer school of Architecture and Archaeology, Horrea Agrippiana, Roman Forum, Rome, Italy (18-28 June 2020).

Bibliography

- ANDERSON T. (2003) – *Modes of interaction in distance education: recent developments and research questions*. In Moore, M. (ed.) *Handbook of Distance Education*. Mahwah, NJ: Erlbaum: 129-144.
- ARISTOTLE, *Posterior Analytics*. Topica, trans. H. Tredennick, E. S. Forster. Cambridge, MA, Harvard University Press, 1960.
- BRUNO G. (1582) – *Ars Memoriae*. Paris. E. Gourbin.
- BEKAR M., SADIKLAR Z., KÜÇÜK KARAKAŞ B. AND CAMIZ, A. (2018) – "Determination of Technology Based Gains of Students During Informal Education", *Journal of History Culture and Art Research*, 7(3), 593-606.
- BIGGS J. AND TANG C. (2011) – *Teaching for Quality Learning at University*. McGraw-Hill, Maidenhead.
- BOLOGNA A. AND TRISCIUOGLIO M. (2020) – "La tettonica per una pedagogia dell'architettura. Il progetto di una One Person House e nuovi paradigmi teorici". FAMagazine. Coronavirus Città Architettura. Prospettive del progetto architettonico e urbano, 52-53, 50-56.
- CAMIZ A. (2017) – *Tipo, Modello, Tessuto. Dodici lezioni di Architettura*. Davide Ghaleb editore, Vetralla.
- CAMIZ A., VERDIANI G., ÖZKUVANCI Ö. AND ALAK S. (2020). DRUM LAB. *Online Architecture research project* [online], <https://sites.google.com/a/ozyegin.edu.tr/onlinearchitecture/> [accessed on 11/8/2021].
- HOUGHTON W. (2004) – *Constructive alignment: and why it is important to the learning process*. HEA Engineering Subject Centre, Loughborough.
- LAURILLARD D. (2012) – *Teaching as a design science*. Routledge, London.
- QUINTELLI C., MARETTO M., PRANDI P. AND GANDOLFI C. (2020) – "Interrogarsi sul progetto architettonico e urbano durante la pandemia", FAMagazine. Coronavirus Città Architettura. Prospettive del progetto architettonico e urbano, 52-53, 10-16.
- SHUELL T. (1986) – "Cognitive Conceptions of Learning". *Review of Educational Research*, 56(4), 411-436.
- STRAPPA G., CARLOTTI P. AND CAMIZ A. (2016) – *Urban Morphology and Historical Fabrics: Contemporary design of small towns in Latium*. Gangemi Editore, Rome.
- RONGRONG Y., OSTWALD M., GU N., SKATES H. AND FEAST S. (2021) – "Evaluating the effectiveness of online teaching in architecture courses", *Architectural Science Review*, 1-12.



Alessandro Camiz - graduated in Architecture at "Sapienza" (1999). He cooperated with Sartogo Architetti Associati for the New Italian Embassy (Washington DC), the Church of Jesus' Holy Face (Rome) and "Roma Interrotta" at the XI Venice Biennale. In 2007 he discussed his doctoral thesis (Sapienza), and therein attended Post-Doctoral studies until 2014. He taught at the Rome programme of the School of Architecture (University of Miami) and at the Faculty of Architecture, Design and Fine Arts of Girne American University, Cyprus. He is secretary general of the Cyprus Network for Urban Morphology and editor of *Forma Civitatis*, *International Journal of Urban and Territorial Morphological Studies*, Grünberg Verlag, Weimar-Rostock. Since 2018 he is associate professor and director of the Laboratory of Dynamic Research on Urban Morphology (DRUM) at the Faculty of Architecture and Design of Özyeğin University, Istanbul. His main research interests are on architectural design, typology-morphology and advanced technologies for the management and enhancement of architectural heritage. (ASN, Associate Professor of Architectural and Urban Design, 8/D1, SSD ICAR 14)

Tomasz Bradecky
**Virtual and Parallel Exhibitions in Urban Planning Teaching.
 Conclusions from the use of augmented and virtual reality**

Silesian University of Technology, Poland



Fig.01a Large-scale mockups during the exhibition - models of the structure of the city of Bologna

Abstract

Presentation and project summary exhibitions in the teaching of architecture and urban planning, are an optional but integral element of the teaching process. By 2019, they constituted frequent events in the calendars of design and art-related studies. The introduction of remote technologies was unpopular and rare due to numerous limitations. The COVID-19 pandemic has forced the need to work and present teaching outcomes at a distance. Many of the exhibitions in 2020 and 2021 were performed remotely. The challenge of remote exhibitions in the field of architecture and urban planning is to convey the content related to the projects, and the form of their display is very often illustrative display boards and mockups. Various technologies are used for their remote presentation, such as virtual exhibition galleries, as well as augmented and virtual reality. This paper undertakes a discussion on the methods of implementing virtual exhibitions, their advantages and disadvantages, and the techniques used. There is also a description of 3 original exhibitions organized in the field of architecture, devoted to the structure of cities, two of which were organized in a mixed (parallel, hybrid) formula, during which participants presented elements of the exhibition, including physical models, through live transmission, while simultaneously presenting previously prepared, analogous models in augmented and virtual reality.

Keywords

virtual exhibition, urban planning teaching, hybrid teaching methods, augmented reality, city structure models

A virtual exhibition (VE) was earlier defined as an online Web-based hypertextual dynamic collections devoted to a specific theme, topic, concept or idea (Silver, 1997). A virtual exhibition (VE) is a Web-based hypermedia collection of captured or rendered multidimensional information objects, possibly stored in distributed networks, designed around a specific theme, topic concept or idea, and harnessed with state-of-art technology and architecture to deliver a user-centered and engaging experience of discovery, learning, contributing and being entertained through its nature of its dynamic product and service offerings (Foo, 2008).

A synthetic collection of artifacts, which incorporates multimedia and virtual reality technologies, alleviates the problem of storing, preserving and protecting the real artifacts and allows virtual spaces to contain a limitless number of exhibits, to which users have access at any time and from any place. (Spyros et al. 2013).

Virtual exhibitions can be associated with a virtual museum. However, presenting a museum's collection online doesn't mean that museum's application can be defined as 'virtual museum' whether it has a real location or not. Likewise, the applications that give virtual navigation to visitors are not a virtual museum (Salar et al. 2013). At the same time, in virtual museums Virtual reality applications can create objects and situations those are not real and make the visitors feel in real environment (Salar et al. 2013).

The most usual virtual reality presentations only relay on mental immersion and are characterized by the display of 3D environment on a 2D screen.

(Cláudio A. P., Carmo M. B. 2013). However, there is a great diversity in terms of visualization and user interactivity in the available approaches, as a multitude of different technologies has been employed. (Spyros et al 2013).

Augmented reality technique has been explored either inside the museums or in the open-air in archeological sites. On-site virtual reconstructions can be presented outdoor in real environments to substitute physical rebuilding of historical remains, which could interfere with archeological research. (Cláudio A. P., Carmo M. B. 2013). Typically in architecture exhibitions we find presentations of mockup fragments and installations aiming to evoke and represent the absence of real architecture (Postiglione G. 2018 p. 53)

With the ubiquity of smartphones people carry a high-end interaction device with them at all times. Such technologies allow museum visitors to directly interact with an object, exhibit, or even an entire gallery, but might also provide access to the vast digital repositories that are available online (Lischke et al. 2014, p. 150). Physical exhibitions with online content can be called hybrid or parallel exhibitions. The Parallel Exhibits approach aims at creating a shared online and on-site experience where visitors are provided tools that enrich their physical (or virtual) museum visit using existing digital repositories and resources (Lischke et al. 2014 p. 151).

Currently, two directions of creating virtual exhibitions can be distinguished. In the first one, a virtual walk is generated through exhibition space. Many museums use interactive panoramic photographs of their interiors and 3D scans of selected exhibits. Similar effects are supported by web applications such as kuula, (www.kuula.co), artsteps (www.artsteps.com), the great advantage of which is intuitiveness and low degree of complexity. The second direction is not just about virtualizing the exhibition area, but also the exhibition objects themselves, in the form of models accessible through dedicated apps and devices. In that trend, interactive solutions are often used to allow to experience virtual models in the exhibition space. Augmented reality models can be used successfully in architecture and urban planning education, as exemplified by the experiments carried out by Fonseca et al. (Fonseca et al. 2012, 2017).

Within the framework of the international project *ArchéA* - Architectural European Medium-Sized City Arrangement, three exhibitions were organized in 2019, 2020, 2021 at the Faculty of Architecture of the Silesian University of Technology in Gliwice, with the theme of city structure models. The first one (2019) was typically non-virtual in nature. The others were organized as parallel exhibitions in a hybrid formula, with elements of stationary and virtual exposition. The exhibitions were experimental in nature, unlike



Fig. 01b Public presentation, 28 May 2019; author: T. Bradecki

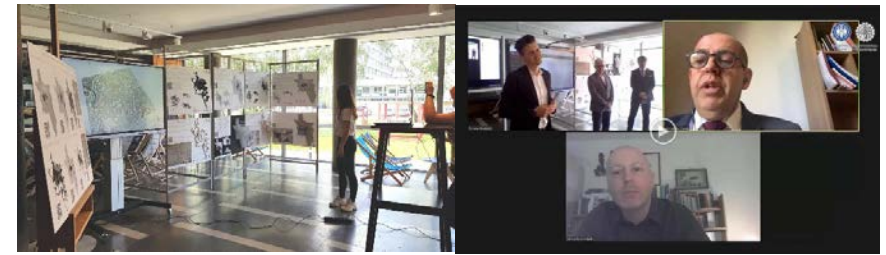


Fig.02a-02b Rehearsals of the exhibition elements: mockups, boards, touchscreen monitor, and broadcast video camera; author: T. Bradecki 2020; View from online broadcast; source: <https://youtu.be/Ke-CWUyHgqQ>

professional dedicated solutions used in museums. The presentations were made by amateurs (students and a university teacher), and therefore included certain necessary simplifications. This was done using apps available on desktop computers and smartphones. The Augment app (augment.com) allows you to view the models yourself in either on-screen view or augmented reality mode, i.e. it is possible to 'place' the model on any flat surface, such as a desk, and view it. The disadvantages of the application are the limitation of scaling and zooming capabilities and the medium level of model rendering (shadows, reflections). The sketchfab app (sketchfab.com) is similar to augment.com and, in addition to the augmented reality option, also offers image generation adapted for use with virtual reality goggles, i.e. a 3D walk. The application features no scaling limitations, and high rendering quality. However, the app has high hardware requirements and may not work on some devices. The teliporime app (teliporime.com) allows you to take panoramic (360) photographs using your smartphone and then share them so that they can be viewed interactively in the app. All of the above tools were used in the exhibits described below.

The exhibition dedicated to analysis of the structure of the city of Bologna was organized on 28 May

2019. Five models were presented in the exhibition, including density models, housing density (Fig. 01a). The on-site exhibition was attended by the presenting students, academic staff from the home university, invited professors from abroad, invited guests (Fig. 03b). The presentation of the models was recorded and streamed online. This exhibition should be considered a traditional one, where models could only be experienced at the exhibition site. This was complemented by a pre-recorded video devoted to the subject.

The exhibition dedicated to analysis of the structure of the city of Aachen was organized on 9 June 2021 in the form of a static transmission using a single video camera (Fig. 01a). The exhibition showcased 8 models available in augmented reality, 4 of which were also displayed as mockups, and it was complemented with boards with information on them. The number, complexity and size of the models, were limited by the need to complete the work individually, at home, due to the pandemic.

The on-site exhibition featured three academics and two students. Also, two professors from foreign universities offered remote comments on the event. The guests were viewed with the help of a ZOOM broadcast (Fig. 02b), and they received information



Fig.03a-03b Exhibition of elements of the Zabrze city structure models: models, charts, touch screens with centrally located video camera for transmission purposes; author: K. Fross

on the content of the exhibition beforehand. The presentation of the models was live-streamed with a pre-recorded video by the students. This was due to concerns about the difficulty and quality of transmission. During the broadcast, they demonstrated how to use the augment application using one of their models as an example.

The exhibition on analysis of the city of Zabrze was organized on 22 June 2021. The exhibition featured 12 models, including 8 mockups, as well as links and boards describing them in augmented reality. The number, complexity and size of the models were made possible by group work in the University's laboratory. The results of work are presented in a concise publication (Borowiecka M. Bradecki T. 2021), which includes direct links to augmented reality models, examples of how to use it and experience the models in the field, e.g., display the models at a scale close to real dimensions and compare the studied objects with the environment (Fig. 04a, 04b). The publication was made available online before the exhibition, and included links to all the 3D models and panoramas of the places that these models reflected (teliporthe app). During the broadcast, guests were presented with ways of using augmented reality (augment, sketchfab apps) and virtual reality (sketchfab). The exhibition was attended by academic teachers, invited guests from the city of Zabrze, a group of 14 students, and the authors of the exhibition. Two commenting professors from foreign universities participated in the event remotely. The presentation of the models was recorded live, and opportunities to experience all the models were presented: mockups exposed on site, models on touchscreen monitors (Fig. 3a, 3b), augmented reality and virtual reality (VR goggles) models (Fig. 03c, 03d).

In the described exhibitions, a similar scheme of

the didactic process was adopted: project-oriented teamwork of students, creation of a knowledge base and presentation materials, presentation preparation, summary exhibition. A similar process was already practiced in 2018 during the multi-person mockup work for the Upper Silesian Metropolitan Union (Bradecki T. Cabaj M. 2018). Working in real time on 3D models and augmented reality, has been shown to be effective during distance learning (Bradecki T. 2021) and this had a significant impact on presentation and performance.

Students involved in the didactic process and the exhibitions found the end result very satisfactory, even though preparation of the exhibition was an extracurricular element of the traditional course. The difficulty was preparing an explanation of what augmented reality is, and how to experience the models. The models that represent the structure of entire cities in data form (e.g. the housing density model) were often not fully understood (the cases of Bologna and Aachen). The most popular ones were models of the structure of public spaces (the case of Zabrze). This is confirmed by the statistics of the number of views of single models on the sketchfab.com platform. The infrastructure used for online broadcasting proved to be a challenge in implementing the hybrid exhibitions. Ideally, multiple cameras should be used at different points in the exhibition so that you can switch views to different elements. This was only achieved in the case of the exhibition devoted to Zabrze. Table 1 presents characteristics of the completed exhibitions: selected elements, tools used and their advantages and disadvantages.

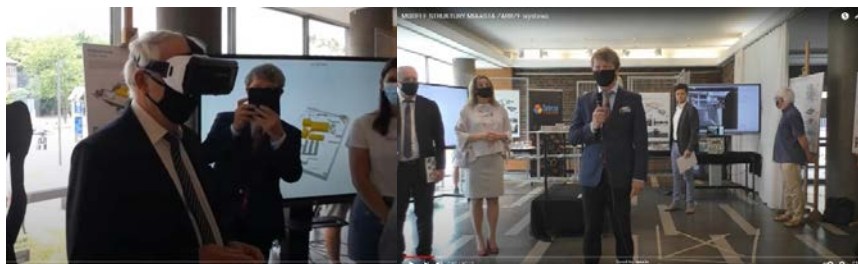


Fig.03c-03d Exhibition - Models of the structure of the city of Zabrze: view from online transmission, experiencing models in virtual reality, presentation of the project; source: <https://youtu.be/a9qQA-lrOW4>

Tab. 1. The selected elements, applied tools and their advantages and disadvantages in the exhibitions dedicated to the models of the structure of the cities of Bologna, Aachen and Zabrze.

Subject of the exhibition	Bologna, 2019	Aachen, 2020	Zabrze, 2021
Exhibition type	On site	Hybrid	Hybrid
Number of physical/virtual models	5 / 0	4/8	8 / 10
Dimensions of models	200x200 cm	50x50cm	100x70 cm
Technology	-	Augmented reality	Augmented reality, virtual reality
Portals and applications supporting technology	-	augment.com	Augment.com, sketchfab.com, p360
Study of the development area	Literature, remote, with the help of materials provided by a local research team	Literature, remote, with the help of materials provided by a local research team	Remote and self-testing in situ
Presentation of live models	None	Partial (one model demonstrated)	Full (selected models were demonstrated to guests)
Need to have an app	no	yes/no	yes
Estimated number of viewers	40 on site	70 during the broadcast 136 views (on 05.07.2021)	20 on site, 90 during transmission
Number of views of the presentation video	137 (on 05.07.2021)	220 (on 05.07.2021)	52 (on 05.07.2021)

The described cases can be considered as the best practices for a blended flexible training activity in architecture for universities. The effects of the work have continuation - elements of the exhibition dedicated to Bologna were exhibited during an event of international significance, i.e. 4 Design Days in Katowice in January 2020, attended by several thousand visitors. The exhibition and publication, made for the City of Zabrze, are to be presented in Municipality buildings. In all of the cases described above, the additional elements included videos presenting the content of exhibitions and information on how to prepare and use the models. These videos were very useful in conveying the general idea of the exhibition.

Conclusions

Presenting exhibitions in the real and virtual worlds is becoming increasingly popular. The pandemic-era experience can be considered very valuable and stimulating for further experimentation. It should be assumed that presenting the results of work in the field of architecture and urban planning in the form of two parallel real and virtual modes, is becoming standard. The effects of augmented reality can be considered promising and developmental, especially when considering the technological development of applications and devices and the increasing ease of access to them. Interactivity seems to be quite important especially for the presentation of 3D models: large-scale touchscreens and augmented reality allow the models to be experienced freely. Virtual reality model presentations work better during on-site exhibitions: then the devices (VR goggles, software) are prepared, and those attending can

focus immediately on exploring the model. It can be stated that virtualization of exhibitions can be effective, provided that the methods, devices, and technologies used for virtual transmission are not complicated to use. The organization of hybrid exhibitions allows for a combination of on-site and virtual visitor experiences, which provides an opportunity for better dissemination.



Fig.04a-04b-04c Model of public spaces of the city of Zabrze viewed in augmented reality in the vicinity of the building of the Architecture Faculty in Gliwice, access to the model using QR-code, model at the exhibition site; authors: T. Bradecki, K. Fross

Bibliography

- Bradecki T. 2021 *Mapping Urban Spaces with the Use of Physical, Digital, and Augmented Reality Models – Experiences from Applications in Architectural and Urban Education* in Amistadi L., Balducci V., Bradecki T., Prandi E., and Schröder U., *MAPPING URBAN SPACES*, p.247-256 ISBN 9781032041261 Abingdon, New York
- Borowiecka M. Bradecki T., (edit.) 2021 P. Białas, M. Borowiecka, T. Bradecki, K. Bryłka, K.Chudy, M. Ciebień, M.Klyta, D. Kowalski, J. Kurowska, K.Majchrzak, G.z Staroń, W. Szostak, D. Zalewska, K. Zbrzeźniak, P. Zych, *Models of the city of Zabrze structure : public space, mockup, 3D, augmented and virtual reality models*, Wydawnictwo Politechniki Śląskiej
- Bradecki T., Cabaj M. 2018, *Project-based learning framework for large groups: the case study of the silesian metropolis (gzm) model* - iceri2018 Proceedings, 11th annual International Conference of Education, Research and Innovation pages: 9853-9862 Publication year: ISBN: 978-84-09-05948-5 ISSN: 2340-1095 doi: 10.21125/iceri.2018.0823
- Cláudio A. P., Carmo M. B.2013 *3D Virtual Exhibitions* May 2013 DESIDOC Journal of Library & Information Technology 33(5):222-235
- Foo, S. (2008) *Online Virtual Exhibitions: Concepts and Design Considerations* DESIDOC Journal of Library & Information Technology 28(28):22-34
- Fonseca D. Redondo E. Sánchez E. (2012). *Developing an augmented reality application in the framework of architecture degree*. In Proceedings of the 2012 ACM workshop on User experience in e-learning and augmented technologies in education, 37-42
- Fonseca D. Redondo E. Sánchez E. Riera A. Valls F. (2017), *Educating Urban Designers using Augmented Reality and Mobile Learning Technologies Móvil* RIED. Revista Iberoamericana de Educación a Distancia 20(2), pp. 141-165
- Lischke Lars, Dingler Tilman, Schneegaß Stefan, Schmidt Albrecht, van der Vaart Merel, Wozniak Pawel (2014) *Parallel Exhibits: Combining Physical and Virtual Exhibits* Conference: NODEMAT: Warsaw, Poland Volume: Engaging Spaces: Interpretation, Design and Digital Strategies: December 1-3, 2014,

Warsaw, Poland: proceedings

Postiglione G. 2018 *Exhibiting architecture: three paradoxes*, Domes 2018/2 pp. 52-56

Salar H. Özçınar H. Çolak C. Kitis A. 2013 *Online (Virtual) Exhibitions Applications in Education* DESIDOC Journal of Library & Information Technology 33(3):176-182

Spyros Bill Spyros Vosinakis Andreou Ioannis Panayiotopoulos Themis 2013 *Adaptive virtual exhibitions* DESIDOC Journal of Library & Information Technology 33(3):183-198

Internet references

<https://kuula.co/> [access 2021.07.04]

<https://www.artsteps.com/> [access 2021.07.04]

<https://www.augment.com/> [access 2021.07.04]

<https://sketchfab.com/> [access 2021.07.04]

Handbook on virtual exhibitions and virtual performances version 1.0 Access: <http://www.digitalmetesculture.net/article/handbook-onvirtual-exhibitions-and-virtual-performances>

The structure of the city of Bologna case study website: <http://urbanmodel.org/en/models-of-the-structure-of-the-city-of-bologna/> [access 2021.07.04] Presentation video: https://youtu.be/tIDoR3Ae5_Y [access 2021.07.04]

The structure of the city of Aachen case study website: <http://urbanmodel.org/en/models-of-the-structure-of-the-city-of-aachen-2/> [access 2021.07.04] Presentation video: <https://youtu.be/wH4pH0GV3e4> [access 2021.07.04] Exhibition streaming: <https://youtu.be/Ke-CWUyHgqQ> [access 2021.07.04]

The structure of the city of Zabrze case study website: https://www.polsl.pl/rar/en/ps_aktualnosci/invite-you-to-the-exhibition-entitled-models-of-the-structure-of-the-city-of-zabrze/ [access 2021.07.04] Presentation Video: <https://youtu.be/53yqZmwTsAc> [access 2021.07.04] Exhibition streaming: <https://youtu.be/a9qQA-IrOW4> [access 2021.07.04]



Tomasz Bradecki - lecturer and researcher in the Department of Urban Design and Spatial Planning. Assistant at the Faculty of Architecture at the Silesian University of Technology in the Department of Urban Planning and Spatial Planning, academic teacher and lecturer, permanently combines professional work with teaching, since 2016 the founder of the URBANMODEL research group www.urbanmodel.org, dealing with models of residence. Author and co-author of several books and many scientific articles in the field of urban design and architecture in Polish and English, creator of a series of workshops for children and youth in the series 'Let's Build Together', Speaker at 4 Design Days in Katowice: www.4dd.pl

In 2015 Tomasz Bradecki in the group of the best architects of 40 according to the propertydesign.pl magazine, in 2017 a member of the HOMEZONE nomination committee. Designer of many houses and public buildings projects, passionate for urban design, architecture and sports including climbing. Earlier design practice in Germany and United Kingdom.

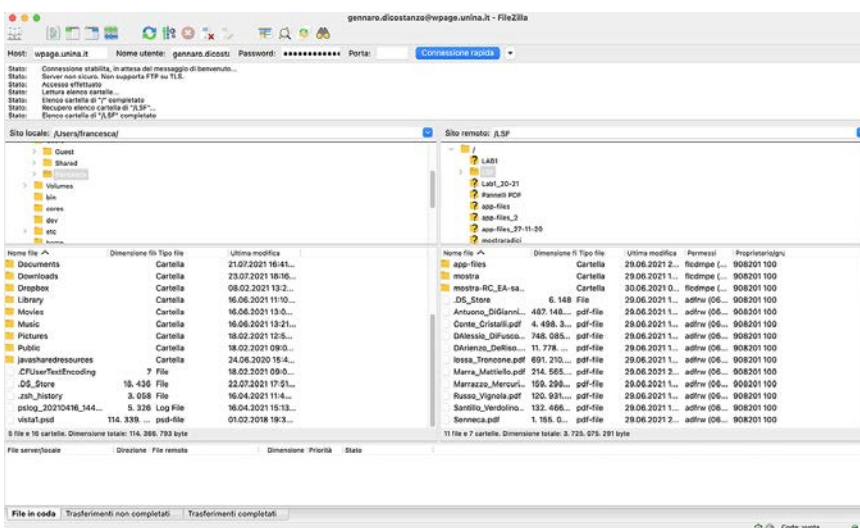


Fig.01 Virtual exhibition of the Architectural and Urban Studio 1, a.a. 2020-21, Prof. Arch. Renato Capozzi with architects Roberta Esposito, Nicola Campanile, Francesca Spacagna.

Fig.02 Interface of the Open Source software Filezilla.

DOI: 10.12838/fam/issn2039-0491/n0-2021/818

Renato Capozzi with Nicola Campanile, Gennaro Di Costanzo, Roberta Esposito, Oreste Lubrano, Claudia Sansò, Francesca Spacagna
Virtual exhibition for design workshops.
Some experiences at DiARC_University of Naples “Federico II”

University of Naples Federico II, Italy

Introduction

In the following we describe some conceptual steps and problematic nodes concerning the theme of new and integrable ways of laboratory teaching aided by advanced computer tools developed at the Architectural and Urban Composition Studio or Final Architectural Studio of the five-year single-cycle degree courses in Architecture and the Master's degree course in Architectural Studio at the DiARC of the University of Naples “Federico II” held – in the academic years 2019-20 and 2020-21 – and coordinated by Renato Capozzi with the collaboration of Nicola Campanile, Gennaro Di Costanzo, Roberta Esposito, Oreste Lubrano, Claudia Sansò and Francesca Spacagna. The contribution, starting from a questioning of the potentialities but also of the limits of a didactics of the project according to the D.A.D. or blended modality according to a wider perspective of heterotopic sense of Foucauldian matrix in the paragraph “Real VS Virtual”, is articulated in three more technical related paragraphs: “The 3D models”; “Elaboration of the sharing interface”; “Experiences of virtual exhibitions”. The essay ends with some provisional “Conclusions” that reflect on the actual potentialities and development prospects of the combined use of the technologies employed. While the text “3D Models” analyses the main techniques for the production of virtual models to define the spheroidal environment in which the exhibition is to be located and the fundamental elements (graphics and models) for the construction of the exhibition's itinerary or multiple itineraries, the following section describes the phases of elaboration of the multimedia product to be shared on the web or through other media, offering the user autonomous navigation in the exhibition spaces and

a strong interactivity of its contents. At the end, the main experiences of virtual exhibitions produced in 2020 and 2021 are reported and exhibited for the first time on 28th November 2020 (only for a part related to the *annus terribilis* 2020) in the Researcher's European night, promoted by MEET me TONIGHT “Faccia a Faccia con la ricerca”, Link city | DiARC UNINA *neaPòlis* Scuola Politecnica e delle scienze di base – Università degli Studi di Napoli “Federico II” through the system: Jitsi Meetings.

Real VS Virtual

The current pandemic condition, caused by Covid-19, has triggered reflections on both real and virtual space. It's possible to say that the division of human activity has split into two categories of space, the interior and the exterior, altering the previous balance that held them together. In addition to the canonical *indoor* activities, the interior spaces of the dwellings have also accommodated all those actions that used to be carried out in the city's exterior spaces, thus emptying the outside of all human action. Even work spaces are being rethought and redesigned with a tendency towards the lack of the physical place, and in this respect great challenges arise which, if overcome, can overcome the risk of isolation and a-sociality (other than social distancing), generating a possible denial of the real relationship with the community that finds its moment of encounter, in this tragic condition, only in virtual space. In this sense, the ways of transmitting knowledge and, therefore, of teaching have inevitably changed, leading to the adoption of web platforms capable of not interrupting both communication between people, transforming it from physical and haptic to intangible, and teaching through D.A.D. or

blended teaching. The “real” collective space for communicating and sharing ideas is extended, thus becoming a “virtual” space and encompassing, in this way, a larger pool of users but greatly reducing interactions between teachers and students and among students themselves.

The new technologies are making more and more tools and services available for getting to know each other, exchanging ideas, reducing distances and establishing contacts with different cultures and worlds more and more quickly. This means that the place of dialogue, previously a “real” space, takes on a new form, becoming a “virtual” space and, at the same time, a necessary interface for sharing knowledge. These are tools capable of extending the possibility of dialogue to a vast and potentially infinite public, which becomes an active part of a collective and shared discussion. With the help of this advanced software, it seems possible to achieve a real sharing of intentions and competences that allow individuals in a community, but not only, to carry out collective actions and debates in another, immaterial place: the “virtual”.

Virtual reality, however, in addition to appropriating human experiences and relationships, also tends to transform the places where human community action takes place, making them volatile and unattainable. From the moment that all activities can take place virtually in real spaces, these adapt by becoming incubators of experiences and configuring new spaces corresponding to definitive and pervasive extensions to the domestic of the global network. Real space becomes promiscuous: place of work, place of schooling, place of apparent encounters. As understood by Michel Foucault, real space becomes “heterotopic”¹ corresponding to a real place that is actually realised but which is configured as a place

outside of any place.

3D Models

The project of a virtual exhibition generally includes two phases: the first one concerns the elaboration of the digital model of the exhibition, including the environment that will host the exhibition, the exhibited objects – being specifically a transposition of a university exam in Architectural Composition, it is a matter of exhibiting the virtual correspondents of graphic and plastic works – and the possible illuminating objects that guarantee to the virtual environment a correct lighting for the elaboration of the render images. The objective of the modelling phase, in fact, is to obtain 360° digital images, for example a representation of the 3D environment that frames in a single view all the possible angles that a hypothetical viewer would obtain by rotating on himself. Such digital elaborations are called “spherical renders” or “spheroids” because of the characteristic “photography” of the environment impressed on an ellipsoid, a three-dimensional surface that can be obtained by rotating an ellipse around one of its axes. The “explained” ellipsoids, similar to the types of representation of the globe that can be observed on maps, are functional to the subsequent construction of the “route” of the virtual exhibition. The second phase, in fact, consists in the use of software for acquiring and processing multimedia files with which to concatenate the spherical renderings into a visual sequence representing the virtual tour of the exhibition.

In the first phase the modelling and rendering software ArchiCAD by Graphisoft was used. Once the modelling of the environment had been completed, the environment was integrated with the students’ work, which, as mentioned above, being two

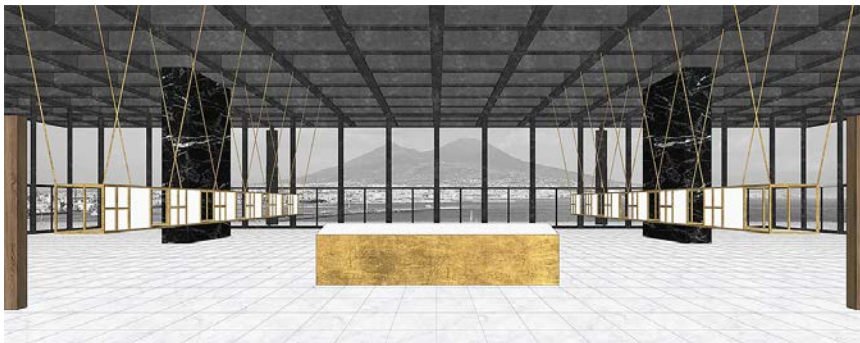


Fig.03 Virtual exhibition of the Final Architectural Composition Studio, a.a. 2019-20, Prof. Arch. Renato Capozzi with architects Gennaro Di Costanzo, Gianmaria Santonicola, Sara Sgueglia, Francesco Vitiello.



Fig.04 Virtual exhibition of the Architectural and Urban Composition Studio 1, a.a. 2019-20, Prof. Arch. Renato Capozzi with architects Claudia Sansò, Nicola Campanile.

types of work, required two different procedures for insertion into the virtual environment. The graphic works and the models were converted, respectively, into .jpeg files and into *.gsm objects, in order to obtain file types compatible with the applications allowed by the modelling software.

For the insertion of .jpeg files, the software allows images of this format to be loaded into the surface catalogue in the library. The surface catalogue, generally intended for the setting of materials with which to represent the materiality of the various architectural parts of the model, also allows, by forcing the basic logic, the simulation of the application of objects superimposed on the surface of the architectural element, as happens in real life for the application of wallpaper, posters or, in this specific case, printed panels on wall surfaces. The image, set up as a texture, is then applied to a surface within the model, simulating the exposed panel.

For the insertion of the models, however, the procedure differs slightly while maintaining some procedural similarities. In this case, the function of the ArchiCAD software for translating a three-dimensional model into a *.gsm object file was used. The real model, as already mentioned, was “translated” from the real to the virtual through the construction of a three-dimensional model, elaborated in turn in the ArchiCAD software from which it was possible not only to obtain a simulation of the model, but also to extrapolate the 2D drawings that formed the basis for the graphic tables representing the student’s compositional exercise. The three-dimensional model file,

generally with the *.pln extension, can be exported, among others, as a *.gsm object file, and then re-imported, with much smaller dimensions to the detriment of modifiability, into another ArchiCAD file, in this case into the virtual environment hosting the exhibition. At the same way of what happens for the surfaces, such *.gsm files are then loaded in the library of the file containing the environment modelling and then inserted inside the model. The only possibility of post-editing that allows a *.gsm file, exported with basic settings, is the overwriting of its surfaces, which, for the case in question, was sufficient to homologate all the virtual “models” with the “white paint” surface.

Once the virtual environment had been set up, the process of constructing the exhibition involved the elaboration of the aforementioned spherical renderings, guaranteed by the same ArchiCAD software, which for some versions has now been implemented with the CineRender rendering engine. The CineRender engine includes, among other things, the so-called spherical camera, which is necessary and sufficient for the processing of spheroids. The spherical camera, set up in a rectangular equi-format in order to meet the requirements for the subsequent processing phase of the virtual tour, allows the processing of the spherical renders that can be acquired, after the production of the image, in .jpeg format and functional for the subsequent sorting and construction phase of the virtual tour, carried out in this specific case through the use of the open source software Marzipano Tool, with which the sequence of the spherical images was created, sorting them



Fig.05 Virtual exhibition of the Architectural and Urban Composition Studio 1, a.a. 2019-20, Prof. Arch. Renato Capozzi with architects Claudia Sansò, Nicola Campanile.

according to the path established for the exhibition.

Development of the sharing interface

At this point in the work, the spherical images are ready to be “connected” to each other by defining a real virtual path. For the publication and sharing of the spheroids and the subsequent conversion of the format from rectangular equi to *tiles* (small square images, literally “tiles”) we used Marzipano Tool, software through which it was possible to order the images by prefiguring an ideal path. When adding the spherical sequences to the *tool*, it is possible to prefigure the information acquired in different folders, each referring to a specific panorama to be extended and personalised. This action is necessary in order to obtain a smoother display mode on the main browsers. Specifically, the open source software Marzipano Tool has an easy-to-manage interface in which it is possible to customise the various display parameters, as well as modify the panoramas to better orientate oneself within the virtual tour. The sharing interface adopted by the Marzipano Tool software is defined by means of a virtual tour which, as we have seen, is specially structured to receive content, specifically the students’ teaching work. In order to insert this content in the virtual space, it is necessary to use a storage server on which the various files are uploaded. This operation is carried out using another Open Source software such as Filezilla, which allows files to be transferred on the Net via the FTP protocol using the storage space made available by a Host from which clients can download and view

the files present. The Host, in the specific case of the virtual exhibitions already processed by the writer, is associated with an institutional address of the relevant department, making the operation totally free of charge. The various contents uploaded on the Host are then inserted in the virtual space of the exhibition through links that recall the path generated by Filezilla, the same Internet address that hosts the virtual exhibition is generated in the same way, that is, the installation file generated by Marzipano Tool is inserted in the Filezilla storage space, which thus has a network path that can be freely accessed.

In short, this operation generates an interactive and always accessible product through which it is possible to explore the projects on show, providing a virtual environment capable of receiving the collective and transmissible value of the Exhibitions. Virtual navigation makes it possible to find one’s way around the museum space, offering a personalised itinerary that can be continually questioned by the user through the use of menus or connection arrows that facilitate the reading of the scenario. Navigating in the virtual environment, from different points of view, the heterogeneous disciplinary, multimedia and text contents are explored and selected, directly involving the visitor in the museum experience: thanks to the interactive links it is possible to access the numerous multimedia insights, made available to users for a fascinating journey in which the museum space, the layout and the works on display merge into a single communication channel.



Fig.06 Virtual exhibition of the Final Architectural Composition Studio, a.a. 2020-21, Prof. Arch. Renato Capozzi with architects Mario Criscitiello, Gennaro Di Costanzo, Oreste Lubrano.

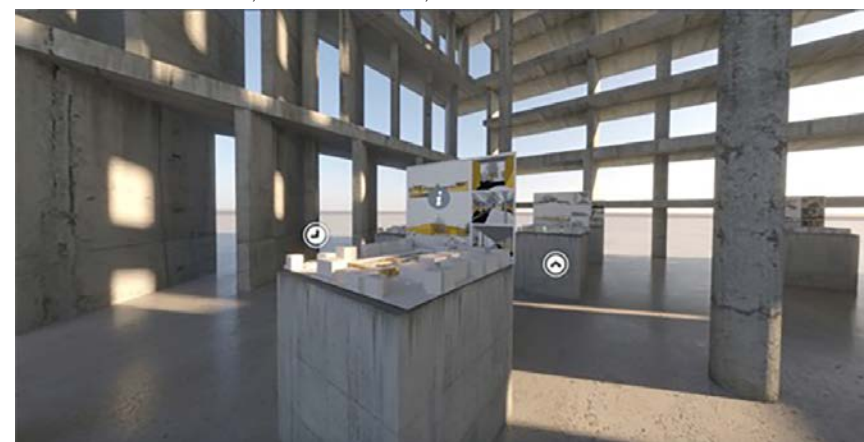


Fig.07 Virtual exhibition of the Final Architectural Composition Studio, a.a. 2020-21, Prof. Arch. Renato Capozzi with architects Mario Criscitiello, Gennaro Di Costanzo, Oreste Lubrano

Experiences of virtual exhibitions

Experiences of virtual elaborations of exhibitions, collecting the results obtained at the end of the laboratory courses, were carried out within the Final Architectural Composition Studio and the Architectural and Urban Composition Studio 1, both for the academic years 2019-20 and 2020-21, at the DiARC_Department of Architecture of the University of Naples “Federico II”, courses held by Professor Renato Capozzi. At the end of the work, the students developed, with the help of the authors, virtual exhibitions² in order to share their reflections with a wider audience and open a debate involving all the actors, direct and indirect, of the process.

Specifically, the preparatory work for the exhibition saw the students involved in the creation of a virtual environment to support the design and analysis work of each individual student. The Final Architectural Composition Studio, for the academic year 2019-20, adopted the space of Ludwig Mies van der Rohe’s *Neue Nationalgalerie* as the exhibition site, and for the academic year 2020-21 the virtual elaboration of Le Corbusier’s *Tower of Shadows*, and finally for the Architectural and Urban Composition Studio 1, academic years 2019-20 and 2020-21, Ludwig Mies van der Rohe’s *Museum for a Small Town*.

These paradigmatic works of modern architecture were chosen because, more than others, they

managed to express the condition of universality of space. The exhibition design was understood as a “project that shows other projects”. In this sense, the experiences of the virtual exhibitions constituted a fundamental phase for the success of the courses, as it was possible to achieve a real sharing of intentions and competences that allowed the students, but not only them, to become aware of the unity of the course and of the need to carry out a collective work, instead of the unrelated condition from which we started in the first months of distance learning.

Conclusions

The virtual exhibition, once designed, as has been shown, can therefore be used as a digital support for the display of educational works, in a similar way to what happened previously, and can take on the function of an additional immaterial place, alongside the unavoidable one. in presentia, in which a fertile and necessary dialectical confrontation can

take place between students, scholars and teachers. The final exhibition of the works constitutes, in our opinion, a consolidated practice and has assumed, in the present time, an unprecedented form becoming a virtual space but at the same time a necessary interface for the sharing of knowledge, a certain surrogate but also a tool that extends the possibility of the debate on the choices made to a wider, potentially infinite audience, which is placed in front of and can contribute to a shared collective work and its necessary “falsifiability”.

Notes

¹ The term “heterotopia”, coined by Michel Foucault, indicates «those spaces which have the particular characteristic of being connected to all other spaces, but in such a way as to suspend, neutralise or invert the set of relationships which they designate, reflect or mirror» (translated by authors).

² http://wpagina.unina.it/gennaro.dicostanzo/LSF/RC_EA_mercatosangiovannididio/; <https://mostralab1.wixsite.com/2021>; <https://lsfcapozziattaiane.wixsite.com/mostradidattica>; <https://nicolacampanile4.wixsite.com/lab1-mostraoonline>.

Bibliography

Foucault M. (2006) – Utopie Eterotopie. Cronopio, Napoli; Foucault M. (2014) – “Eterotopie”. In: Id., Archivio Foucault. Interventi, colloqui, interviste. Feltrinelli, Milano.

Renato Capozzi - architect, PhD at IUAV of Venice in Architectural, Associate Professor of Architectural and Urban Composition at the DiARC of the University of Naples “Federico II”, he is a member of the Scientific Board of the PhD program in Architecture and Construction in the Sapienza University of Rome and of the Governing Council of the Scientific Society Pro-Arch. His research topics are: the theoretical dimension of the architectural design; the lesson of the Masters; the relationship between architecture and reality. His publications include: *Le architetture ad Aula: il paradigma Mies van der Rohe* (Clean, Napoli 2011), *L'idea di riparo* (Clean, Napoli 2012), *L'architettura dell'Ipostilo* (Aión, Firenze 2016), *L'esattezza di Jacobsen* (LetteraVentidue, Siracusa 2017), *Lo spazio universale di Mies* (LetteraVentidue, Siracusa 2020).

Nicola Campanile - graduated in architecture with honours and recommendation for publication in the course Arc5UE at the University of Naples “Federico II” with Professor Renato Capozzi, he is currently PhD candidate at the DICAR-Department of Civil Engineering and Architecture of the Polytechnic of Bari. He carries out research and teaching assistance in the course of Theory of Architectural Design and in the Architectural and Urban Composition Studio I held respectively by Professors Federica Visconti and Renato Capozzi.

Gennaro Di Costanzo - graduated in Architecture with honours and recommendation for publication in the course Arc5UE at the University of Naples “Federico II”, he is currently a PhD candidate at DiARC-Department of Architecture; he has collaborated in the drafting of numerous projects with Professors Federica Visconti and Renato Capozzi, and he has been curator of several architecture exhibitions including: “Carlo Moccia. Tra le torri”; “Renato Rizzi. Lampedusa. La Cattedrale di Solomon” and “Paolo Zermani. Architettura e Tempo. La ricostruzione del Castello di Novara”.

Roberta Esposito - is a PhD candidate at DRACo-Doctorate in Architecture and Construction in the Sapienza University of Rome. She has been curator, at DiARC, of the International Seminar “Lo spazio del soggiorno”, of Architecture Exhibitions such as “Adecuación del Castillo del Cerrillo de los Moros. Linazasoro & Sánchez”; “Pompeii. Città Moderna/Moderne Stadt”; “Rapp+Rapp. The European Skyscraper”; “Paolo Zermani. Architettura e Tempo. La ricostruzione del castello di Novara”, and other exhibitions at the Italian Cultural Institute in Bucharest, such as “Agostino Bossi. Disegni di viaggio and Il design italiano fra gli anni '50 e '90 del Novecento”. She is an expert in the subject ICAR/14-Architectural and Urban Composition, and she carries out research on the theme of the urban grid as a system of order for the construction of the city.

Oreste Lubrano - graduated in Architecture with honours at the University of Naples “Federico II” in 2020. He currently collaborates with the research group coordinated by Professors Federica Visconti and Renato Capozzi at the DiARC- Department of Architecture. He is an expert in the subject ICAR/14-Architectural and Urban Composition. He has carried out teaching assistance in the course of Final Architectural Composition Studio held by Professor Renato Capozzi.

Claudia Sansò - is a PhD candidate in Architectural and Urban Composition at the DiARC of the University of Naples “Federico II”. She has been a visiting researcher at the Instituto Universitario de Arquitectura y Ciencias de la Construcción IUACC of the ETSA Escuela Técnica Superior de Arquitectura de Sevilla. She has participated in international conferences and edited several books including *Ventuno domande a Renato Rizzi* (Clean, Napoli 2020); *Fernand Pouillon. Costruzione, Città, Paesaggio. Viaggio in Italia* (Aión, Firenze 2019); *Adecuación del Castillo del Cerrillo de los Moros. Architettura tra traccia e memoria. Linazasoro & Sanchez* (Clean, Napoli 2017). She is the author of the volume *La moschea e l'Occidente. Tipi architettonici e forme urbane* (Accademia University Press, Torino 2020).

Francesca Spacagna -, graduated in Architecture with honours and recommendation for publication in the course Arc5UE at the University of Naples “Federico II” in 2021. She currently collaborates with the research group coordinated by Professors Federica Visconti and Renato Capozzi at the DiARC of the University of Naples “Federico II”. She is an expert in the subject ICAR/14-Architectural and Urban Composition. She has provided teaching assistance in the Architectural and Urban Composition Studio I held by Professor Renato Capozzi.

Analisis of the Best Practices

Call for papers

Laura Carnevali, Fabio Colonnese
Teaching drawing in a shared community

Sapienza University of Rome, Italy



Fig.01 The Danziger House, 7001 Melrose Av., Los Angeles, from Google Streetview

At the Faculty of Civil Engineering, Sapienza University, Rome, the first year Architecture Drawing course comprises a total of 162 hours (12 Formative Credits or CFU) divided into 51 hours of lectures, 51 hours of exercises and 60 hours of laboratory. Generally a six-months long course, this year it has been reduced into a three-months long course, from October to January, requiring a compression of the program. The problems due to the program compression and to the change of teacher were stressed by the measures for containing the Covid-19 diffusion. The former teacher was reputed “fragile” and precluded from teaching in presence and a new teacher was given the course. Moreover, Sapienza University adopted a mixed format, with a few students present in the classroom and most of them at home. Besides the many technical and instrumental difficulties due to the late equipment of the classrooms with updated hardware and software, the late registration of about a quarter of the students after the admission tests caused some of them to join the class more than a month after the first lesson. Anyway, a friendly collaboration between the “old” and the “new” teacher contributed to overcome most of the organizational questions. Besides the lessons in Descriptive Geometry and Architectural Drawing, the course was centered on the Laboratory. The students were asked to apply the architecture drawing notions to the representation of the Danziger House (Fig. 01), designed and built by the Canadian-American architect Frank O. Gehry in Los Angeles between 1963 and 1965. At the age of ninety, Frank O. Gehry is considered one of the undisputed masters of contemporary architecture, able to interpret the contribution of the masters of European rationalism through the expressions of contemporary artists ranging from Pop Art

to Land Art and an unprecedented sensitivity to the urban landscape and industrial materials. To transfer his sculptural approach to architecture, he developed an original procedure, later defined as *reverse modeling*, which combines tools borrowed from aircraft engineering with laser scanning and digital modelling to transfer the surfaces of his small models in paper, fabric, and mesh first into vectorial models to be reworked and optimized. The students were asked to choose one of Gehry’s works and to prepare a short report to be presented to their colleagues either in presence or by Google Meet, the official platform chosen by Sapienza.

The Danziger House, 7001 Melrose Avenue, was chosen for its stereometry and “apparent” simplicity as well as its position in the huge urban chessboard of Los Angeles. The semi-detached house is at the end lot of a row of buildings and is exposed on three sides. It is made up of two shifted, accosted boxes, which respectively house the residential areas and the production space requested by the client, an artist photographer. Above them, two cubic skylights bring natural light into the atelier and the main bedroom. While the studio has an independent entrance, the residential block appears to be completely closed to the outside. Besides the large garage door, a small, wooden gate is the only visible entrance. Quite informally, it leads to a secret garden protected from the main street, Melrose Avenue, by a tall wall that turns sharply before touching the second box. Here, a large glass-door leads into the residential volume, featuring a double-height living room a kitchen below a sort of internal balcony. Behind the kitchen, there is a staircase leading up to the bedrooms and closing the private garage. A door leads from the kitchen to the full-height artist’s study. It contains the lower box

dedicated to the darkroom and large windows open to the north and east. The graphic and iconographic documentation on the house, which was limited by the libraries lock-down, was enriched by the exploration of the site through Google-maps and Google-street view. As over the years the following owners have modified both the external form of the house and the organization of interiors, the students were asked to restore its original state in their traditional drawings, digital drawings and renderings from the digital models (Fig. 02-03).

When teaching and exercises are held in presence, the freshmen, after an initial orientation period, usually begin to relate to each other. They tend to

organize themselves in small groups, to develop a mutual support, to share data and tricks, to emulate the good-practices, and to grow their own self-confidence. The maturation of the so-called 'soft skills' is accompanied by a series of behaviors that quickly transform a series of individuals into a class endowed with a sort of collective intelligence. Teaching in the socially distanced classroom, with half or more students attending from home, also has the contraindication of discouraging these behaviors and keeping the relationship between teacher and student on an individual level. To overcome this limitation, in addition to the institutional platforms, such as Sapienza E-learning, some expedients were



Fig.02 Renato Danilo Carcione, Rendering from the digital model (Autocad)



Fig.03 Leonardo Perna, Rendering from the digital model (Autocad)

adopted. The collegial correction, albeit anonymous, of the exercises is one of these expedients to let knowledge circulate. Another one is the public presentation of Gehry's works. In drawing a sheet of free-hand sketches, students were suggested to think of particular subjects (a pizza-boy, a night thief, a little bird, and so on) and routes in the house, introducing a sort of "role-play game" narration able to engage their imagination and enthusiasm.

In some cases, small study groups spontaneously formed and worked home albeit keeping the social distance, but students were also encouraged to share their homework time through apps, such as Discord, that allow them to chat, share images and videos, and listen to music together while drawing. In this sense, the course was promoted as a non-competitive work environment but rather open to error, experimentation, and sharing, as university should always be.

In the case of drawing and designing disciplines, social distancing discourages a direct emulation of the teacher, who is not allowed to be sitting down near the students and drawing together with them, on their own sheets. To struggle this situation, the use

of the traditional PowerPoint slide presentations was decreased while free-hand drawing was enhanced, from the geometry constructions to the ways of exploring the plans and sections of Gehry's Danziger House. In particular, the teachers used a graphic tablet with Adobe Photoshop or Apple Concept and a large digital blackboard in the classroom, which is equipped with software for digital painting (Fig. 04). Similarly, the exercises were corrected with digital software over the screenshots. To facilitate this process, students were asked to draw with softer pencils to rend their drawing more visible and were provided with basic notions of Photoshop in order to optimize the digital photographs of their graphical works.

The students apparently reacted with an increasing and active presence to the course. While at the beginning only six or seven of them came to faculty, at the end of November, 28 of them, almost half of registered students, were present in the classroom. Despite the scheduled turns, some students asked to be invited almost always while a few of them, generally living outside Rome, preferred to stay home for the whole course.



Fig.04 Sketching an interior perspective view on the digital tablet (Digital painting)

The students were accompanied to the exam both with collegial reviews on Google Meet and Zoom, always at a distance, and by Q&A emails. In the impossibility of carrying out written exams in a conventional way, the notions of geometry were verified through a series of small exercises to be performed and showed through the smartphone camera, while the Laboratory drawings were presented through digital photographs. Most of these considerations concern also with the students of the course of Digital Drawing at the Faculty of Architecture, which one of the two teachers had in parallel with this. In particular, these students were given the opportunity to share their drawing on the platform MIRO, which presents a number of tools for shared work. Each student was allowed to colonize one of the squares of a large grid, which can be zoomed and browsed, and to put a selection of his or her drawings – from the exercises done at the course to personal sketches, collages of paintings – up to create a sort of anarchic exhibition. Although only half of the students accepted the invitation to the platform, this self-managed virtual space gave them the opportunity to know each other and to learn from each other. Their contagious and intimate participation to the MIRO platform is testified by the spontaneous collage they created as a surprising Christmas card for the teacher, in which each of them drafted a portrait of another student with a personal technique and one of them, chosen as a coordinator, assembled all the portraits into a photograph of Piazza del Popolo (Fig. 05).

The results of the critical review of the program and the experimentation of different methods and topics due to the pandemic of the Architectural Drawing course can be read in the students' exams. In February 2021, 54 exams of 67 registered students were carried out, about 80% of the total. While the number of exams can be considered a quantitative good result, the general quality of the students' work shows an evident decline. The first question concerns with the contents. A number of exams demonstrate of the students' difficulties in controlling three-dimensional configurations in their mind and abstract visions. This is due to the short time the students have to assimilate complex concepts which cannot be compressed. The second question concerns with their ability in drawing, both free-hand drawing and CAD drawing, which can be enhanced only sitting close to them and correcting directly their drawings. Moreover, some of the students have missed the last revisions and the opportunity to refine and perfect their works.

When questioned about their experience, the students stressed that, despite the difficulties in getting to university, the classroom offers opportunities for concentration and application that are by far higher than those they can have at home. Nevertheless, attendance in the classroom was conditioned by external factors such as movement policy changes, a raising number of infections and even the absence of other teachers in the afternoon, which forced students to get back home in a few minutes and to attend the on-line lesson.

Another aspect is specifically a technical one. Implementing the hardware and software instrumentation as the course was proceeding forced the teachers and students to constant upgrading. The technical difficulties related to the efficiency of hardware and software were overcome only by the constant commitment and creativity of the teachers and the patience and participation of the students. This dynamic led to consider that the conditions imposed by the pandemic seem to have promoted an exceptional and favorable situation. In many cases, the general "hostile" situation promoted an exceptional atmosphere of participation, interaction and solidarity between teachers and students, "all in the same boat", which is worth to reflect and experiment upon in the next future.

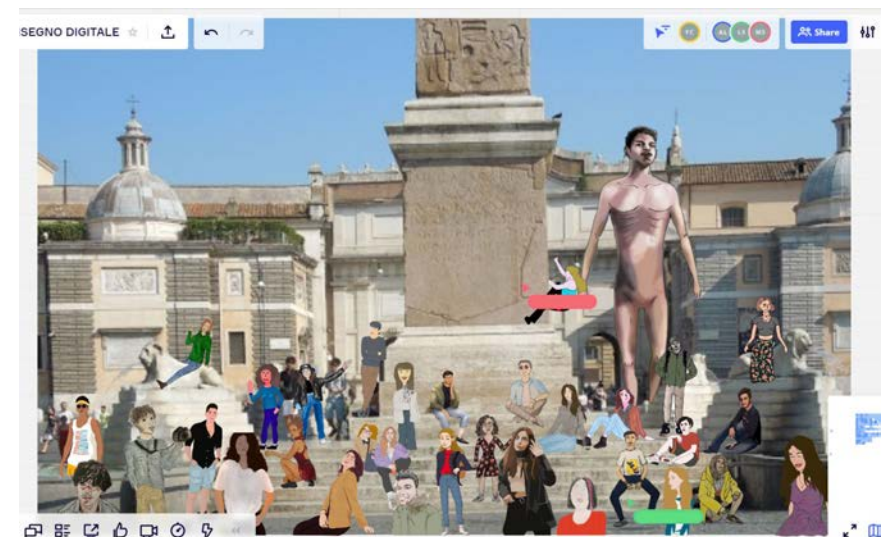


Fig.05 The Christmas Collage Card made by the students (MIRO)

Dariusz Masły
Distance learning of designing high-performance, sustainable, intelligent buildings at the Faculty of Architecture of the Silesian University of Technology

Silesian University of Technology, Poland



Fig.01 3D model presented by the student during the architectural design studio

The article presents experiences from the use of distance learning methods during project classes, seminars and lectures. The author conducts 3 courses in the field of sustainable architecture, high-performing buildings, energy efficiency and modern methods for simulating the building performance. These are: “New Technologies and Methods in Architecture Design”, “Intelligent Building - Building Performance Analysis” and “Specialist design resulting from local conditions”. Students taking the courses are in the first year of Master’s studies at the Silesian University of Technology (SUT). Following the European Bologna model, this program at SUT lasts one and a half years and requires a bachelor’s degree. The primary aim of these subjects is to develop the skills needed by the architecture student to be objectively critical in selecting high performance, sustainable, intelligent design solutions and to provide the knowledge needed to perform computerized analysis of building performance. To achieve this goal, students learn about definitions, terminology, a broad, general area of sustainable building quality, building performance analysis and evaluation methods. Most building assessment methods have reached their current level of advancement in the last four decades. The author proposed to classify quality evaluations into flexible methods focusing on user experiences with building performance (e.g. Post Occupancy Evaluation) or methods based on a systematic set of building performance categories. The second category of methods is presented during the courses. Among them are: Green Building Challenge (GBC), Leadership in Energy and Environmental Design (LEED), Building Research Establishment Environmental Assessment Method (BREEAM), and The Real Estate Norm (REN).

These methods enable scientists and practitioners to develop benchmarks and standards. At the beginning selected case studies of high-performing buildings are presented. Analysing them allows students to identify most promising energy-efficiency and occupants’ comfort measures in different building types. During seminars students gain skills in evaluating these measures. Students’ analysis teaches them to distinguish between buildings that are actually high performing and those that are not sustainable in practice. Then the lectures present the use of solar radiation for lighting and heating, control of heat gains and losses through the orientation and form of the building, comfort control without the use of fossil fuels. During design classes, students learn, in particular, the techniques of applying new and innovative simulation methods, techniques and tools for analysing the quality of daylight, energy efficiency of buildings and user comfort. Equipped with a thorough understanding of what a sustainable, high-performance, passive, and even zero-energy building means, the student is able to evaluate architectural solutions both at university and as a practicing professional. Finally, a simulation-based computer course takes place. Students learn Building Performance Analysis tools. Knowledge in the field of BPA allows students to develop their skills and ultimately perform their own computer simulations when designing in an architecture design studio.

At the beginning of the first semester, after the announcement of the lockdown in Poland in March 2020, distance learning took place mainly at the Silesian University of Technology using the e-learning platform. This tool had many limitations, e.g. the size of uploaded files could not exceed 10 MB. This made it practically impossible

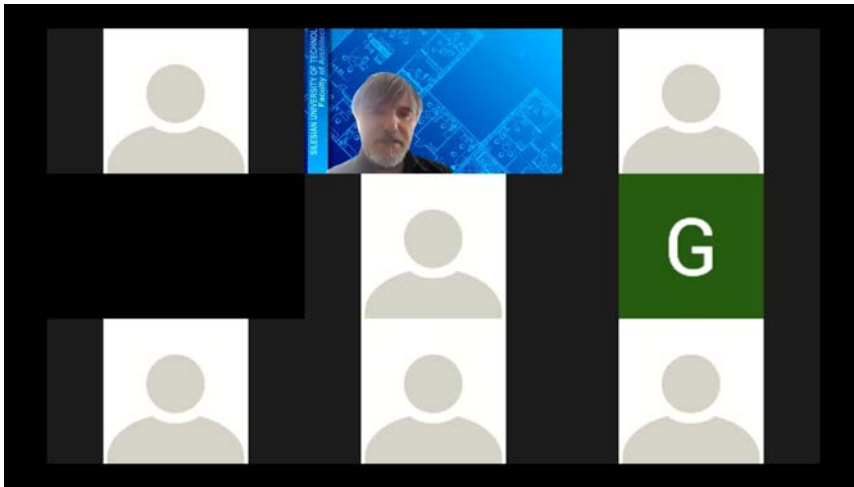


Fig.02 Discussion during the seminar, students' cameras are turned off

to provide students with video materials. Not to mention recording entire lectures and making them available to students. In the first period, teachers were looking for free software that would enable online conversations and team collaboration, e.g. skype, microsoft teams, and tried to use them during classes or consultations. These attempts were unsatisfactory. Sometimes there were dropped calls, delays, and poor-quality audio and video. With too many participants, conducting conversations became very difficult. At the end of March, the university purchased the Zoom.us video conferencing tool. From that moment on, lecturing for up to 300 students ceased to be a problem. The video platform made it possible to present video materials with sound, show presentations in various formats and activities performed by the teacher and students on their computers. Thanks to this, it was possible to conduct computer software classes in real time. The Zoom.us also made it possible to record lectures and classes in high quality. These learning materials were then made available most often on Google drives created by a given group of students. For example, 30 hours of recorded HD lectures fit easily on a standard size Google drive. Teaching materials in the form of large files were also made available on OneDrive, an online cloud storage included in Microsoft 365. Currently, materials in the form of large files are collected on Nextcloud. Links to learning materials are posted

on the e-learning platform. To sum up, at the end of March 2020, the employees of the Silesian University of Technology were equipped with tools for conducting design studios, classes, seminars and lectures. It should be emphasized that from the very beginning of lockdown, training for teachers in the use of remote learning tools was conducted. Architectural design studios are very troublesome when it comes to distance learning. Criticism/ Critique is one of the most common learning methods. During the classes, the student's graphic work is presented and the tutor reviews it. Teaching involves non-verbal forms of communication. Although the online presentation of students' projects in real time is possible, for example via the aforementioned Zoom.us video platform, the legibility and comprehensibility for the teacher of the design solution presented on the screen is much lower than the documentation in the form of a printout. In the case of the latter, e.g. a floor plan or a cross-section is perceived as a whole, and the eye moves freely across the unfolded drawings, quickly focusing on a selected fragment, and then immediately jumps to the analysed solution on another drawing, enabling immediate comparison. The presentation of an architectural design on a computer screen allows the whole sheet to be shown on the screen, the design in this form being illegible, or a close-up of a selected fragment. The analysis process is no longer smooth. This problem

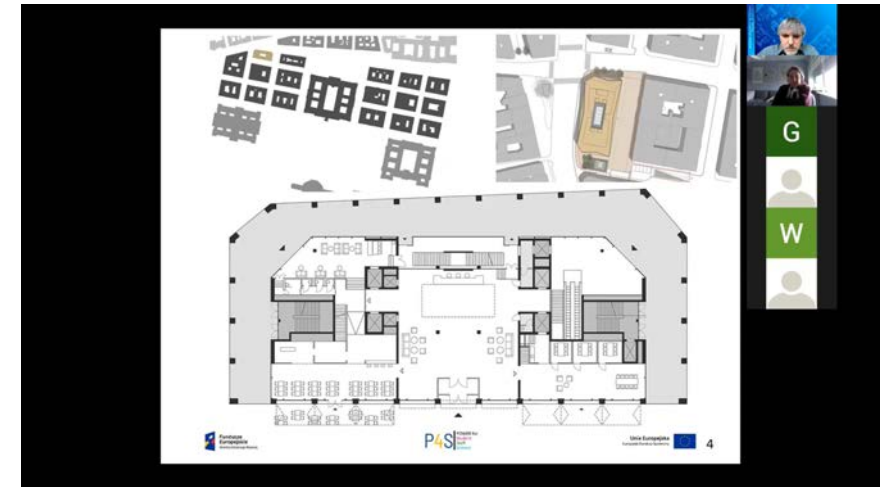


Fig.03 Case study presented by the student during the seminar

also occurred during traditional classes, when the student did not bring a printed project, but presented it on a laptop. However, working using a video conferencing tool brought additional difficulties. Displaying parts of the project saved in separate files took longer, which disturbed the smoothness of the analysis. Moreover, even when the project was presented on the computer monitor during the traditional class, the graphic correction made by tutor was most often in the form of sketches on paper. Sketches in computer documents are also possible, which was used in distance learning, but the constant switching of the presentation possibilities between the teacher's and the student's computer additionally slowed down the process. At this point, the issue of presenting a 3D model on a computer should also be mentioned, which presents the architectural design more clearly than traditional 2D documents. The Zoom.us platform allows you to remotely control the student's computer and view the project as desired. Although the author of the paper does not run an architectural design studio, he encountered these problems while conducting diploma consultations. Conducting lectures via Zoom.us video platform did not cause any difficulties. Admittedly, controlling student participation in the lecture was not possible. The view of students from their computer cameras was turned off, because with the lower internet bandwidth on the students' side,

displaying the image from the camera disturbed the transmission of the lecture. Therefore, it was possible to have cases where a student connected to the lecture transmission but did not actually listen to the lecture. In smaller groups, such as seminars, the students' cameras were also turned off for the same reason. However, the presence of students could easily be checked by their participation in the discussions. The video conferencing tool made it possible to divide students to work in smaller groups and assign these groups to separate virtual rooms. The seminar leader moved freely between the rooms, checking the results of the group's work. At the end of the seminar, the results of the work were presented by the groups to all students. The last type of classes conducted by the author of the paper is teaching the use of CAD and Building Performance simulation software. The students pointed out that it was difficult to watch the activities performed by the teacher on a single monitor and repeat them on the same monitor. Students could not keep up despite the fact that they had previously downloaded the course materials from the e-learning platform. If the windows of the computer program and the video conferencing tool were reduced in size and placed next to each other, the CAD software interface in both the displayed video transmission and the software installed on the student's own computer became unreadable, the command icons were too small or

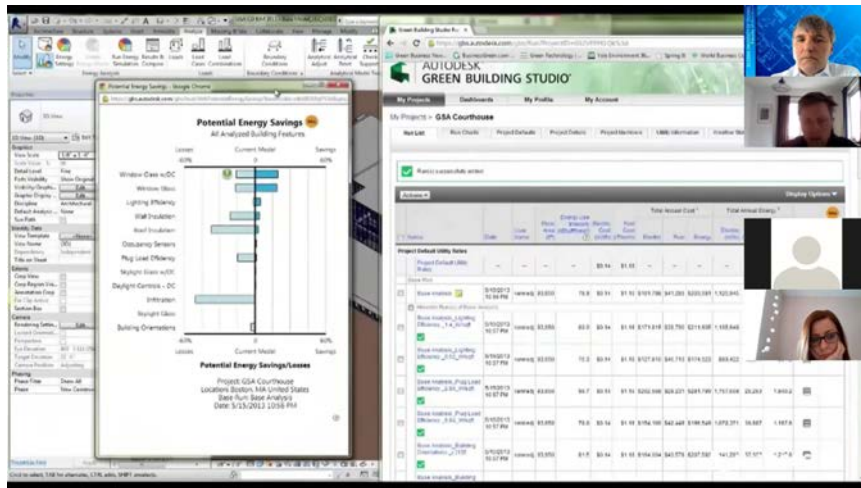


Fig.04 Video presented at a lecture on high performance buildings

some of them became hidden from sight. Of course, the best solution was to use two monitors, but few students had them. Students solved this problem by displaying the material presented by the teacher on a smartphone. The computer monitor displayed the interface of the program being used. The teacher could, of course, respond in real time to student questions and problems, adjusting the pace of the classes to the abilities of the group of students, and repeating selected fragments. It was practically impossible to control participation in classes and work progress.

In addition, all lectures, seminars, and classes have been recorded and uploaded to the cloud service. The students were very pleased with that, which they reported more than once. Traditionally conducted classes were not recorded.

Passing the lectures and seminars given by the article's author took place after submitting a presentation on a topic specified by the teacher. Final slide presentations were uploaded to the e-learning platform or sent directly by e-mail to the teacher's address. Computer software skills were tested using the video platform. The students presented a 3d model of a building they had made and performed the tasks specified by the teacher. This skill check was recorded.

In conclusion, the modern distance learning tools provided by the Silesian University of Technology for teachers allowed them to conduct lectures, seminars and classes without any difficulties.

They have even created new possibilities, such as recording all lectures and classes and making the recordings available to students. It also became easier for the student to contact the teacher. The student could call the instructor and ask for an individual consultation via the video conferencing platform. During the phone call, an appointment was agreed upon, after which the teacher sent a link to the student's e-mail address. Some difficulties were caused by architecture design studios or, in the case of the author, by diploma consultations. These required more work and time devoted to review the student project.

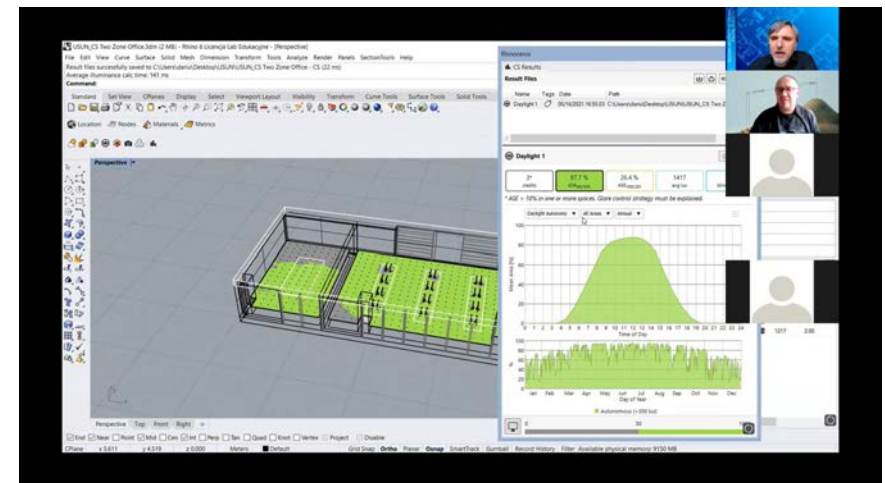
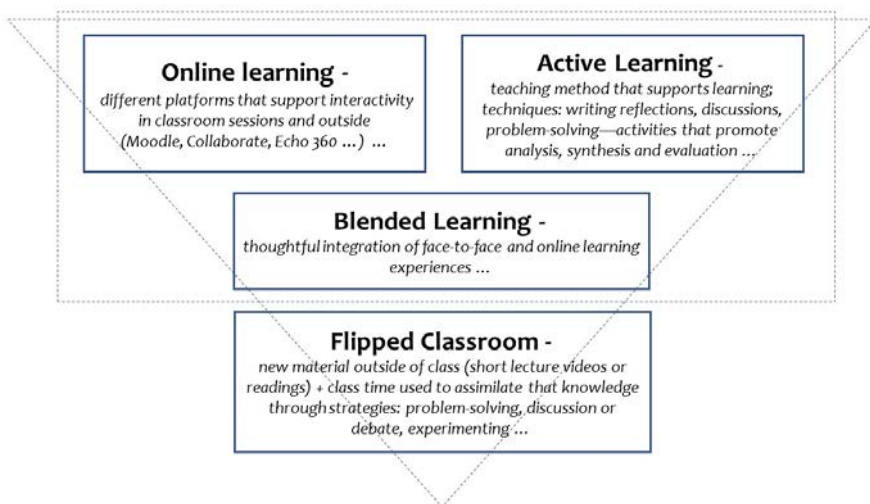


Fig.05 Teaching the use of CAD and Building Performance simulation software



Pre-class activities ...	online ...	carefully guided and structured ... to do
During class activities ...	face to face ...	group discussion + lecture
Post-class activities ...	online ...	snow ball effect ... free, interpretative ... to do
Pre-class activities ...	online ...	Moodle
During class activities ...	face to face ...	Collaborative
Post-class activities ...	online ...	Individual Wiki + Q/A Forum (...)
		Online quizzes + Turnitin

Fig.01 The framework for the teaching provision in CS 1 (Author).

Fig.02 The framework for the class material and flexible learning in CS 1 (Author).

Renata Jadresin Milic, Catherine Mitchell
**An Alternative Approach to Teaching Architectural History:
 Redrawing the Pedagogical Boundaries between Architectural
 History and Design Studio with Flexible and Blended Methods**

Unitec Institute of Technology, Auckland, New Zealand

Through the presentation of a case study this paper advocates for the use of flexible and blended learning techniques to teach architectural history in a way that reinforces the connections between architectural history and problem-solving to inform the students design work in studio. The paper seeks to emphasise the utility of employing digital pedagogies to strengthen architectural history and design studio connections whilst, critically, enhancing student learning. A description of the Critical Studies 1 (CS 1) course, the teaching approaches employed within it, and the impact on student learning is offered within the constraints of this short paper.

To illustrate the value of this alternative approach, material is included from the course developed over three academic years from 2016 to 2019. The critical studies strand in the Bachelor of Architectural Studies (BAS)¹ at Unitec consists of five courses with clear and strong connections. The CS 1 (Level 5, first year degree) course is seen as an important component of the programme in providing students with the understandings and skills to manage the transition between high school and university, a period that is often marked by uncertainty about the challenges brought by tertiary study. So, the course has a crucial role to play in scaffolding students into the BAS, the body of knowledge, and the learning and teaching approaches that span the programme. CS 1 is taught in two 2-hour classes per week + one 1-hour PASS (Peer-led tutorial) class per week. Assessment consists of four key tasks including a timeline and essay (25%), a drawing (25%), a building identification test (10%) and a final exam (40%). It typically has a large cohort of students (90-120) drawn from a diverse range of social and cultural backgrounds.

The Ethos of Critical Studies 1

A key aspect of the teaching approach in CS 1 is related to the attempt to avoid communicating basic descriptive facts; instead, learning is based on interpretation, on sharing of personal reactions, on setting up challenging comparisons and provoking discussion between students. While doing assigned activities, the students discover the work of significant modern architects and architectural practices and the influence of historical examples on the architect's current projects. Using these strategies is underpinned by a belief in the importance of stimulating intellectual curiosity and promoting students' critical thinking about the history of architecture to help them establish their own connections within our discipline. This approach to teaching is further based on the assumption that modern pedagogy needs to replace or at least supplement ex-cathedra teaching and examination. Student research is immensely important in the educational process; therefore, much of the teaching is based on encouraging active and creative approaches to learning. Moreover, through employing new adaptive technologies, it is possible to provide pedagogical opportunities that meet with various student learning styles so that online learning can enrich traditional approaches.

The aims of CS 1 include:

1. To encourage students to approach knowledge as a dynamic process discoverable for oneself, rather than something that is handed down to them.
2. To provoke students to question the world instead of just trying to know it.

These aims were achieved through:

- A. Architectural History is presented from a point

of view that corresponds to present-day demands; to what is the 'problem situation' of the day.

B. Architectural History being coordinated with Design Studio, so that history becomes involved in the dynamics of 'making' architecture.

C. Students are encouraged to take an active role by introducing active learning strategies to encourage them to process information and make their own sense of it – to 'construct' meanings.

D. The use of new adaptive technologies to make face-to-face learning highly engaging, collaborative and team-based. The diagram below shows the preparation of content for online learning and flipped learning opportunities (Fig. 01).

E-learning activities and tools in the course are offered in complementary ways to face-to-face teaching – the CS 1 course is not taught entirely online. It was based on developing learning activities and integrating WBL components/online platforms/ collaborative F2F activities within the course. Preparation of content for online learning/ flipped learning proved to be favourable for expanding learning opportunities; namely, a drive for the course was a connection to Design studio. Preparation of Pre-class, During-class, and Post-class activities by using Individual Wiki + Q/A Forum (Fig. 02), is structured in a way that History can be thought and learnt through: context, *firmitas, utilitas, venustas*, in a similar way as students are expected to present their designs during Crit in a studio environment.

The course is designed to give an active role to the students, considering the class size, the class level, and the class space (traditional lecture theatre). Blended learning (and Active learning generally) of the course material is organised in:

Pre-class activities – online experience; carefully guided and structured; for students "to do something" (Fig. 03);

During class activities – face to face; includes group discussions + lecture (Fig. 4);

Post-class activities – online; to make a "snowball effect"; free, interpretative; for students "to do something" (Fig. 05-06).

The Impact on Student Learning

To identify the impact of the pedagogical approaches employed in CS 1 on student learning, feedback was regularly and systematically gathered from students through monitoring and tracking. This involved administering course evaluations (two types - school and institution-wide) and collecting feedback through emails, written notes, and verbal comments shared by students about the course. This was supplemented by the preparation of regular reflections through the use of teacher evaluative course diaries in weeks 3, 6 and 11. Improved academic results were also identified. From the students' feedback and official course evaluation done by students (2017-2019 especially), we confirmed the value of the pedagogical interventions made. We were able to identify

some specific examples of new connections being made by students between historical examples and contemporary design that have clear connections to the work in design studio.

Some of the questions asked in the questionnaire were: Do you have "Any additional comments about the course requirements structure content resources or teaching facilities?"; "Any additional comments about the teaching on this course?"; "If you have any comments about your own contribution to your learning on this course, please enter them below."

The improvement in students' learning is evidenced in the following (selected) quotes from students' feedback. Students reported that CS 1:

"helped me engage with what I was learning about and find my own interests in the topics. I find myself able to use information that I learnt from the course outside the class. eg: identifying architectural styles in buildings that I see day today."

"... your lectures had new interpretations of history and theory of architecture. You made this study field interesting and made students to realise how it is important to contemporary architecture through creative connections."

"... Comments regarding the experience and the best learning for me was ... forming/understanding a timeline of which architectural styles related/ opposed/overlapped each other ... Your lectures did a brilliant job of helping us to piece this together ..."

Furthermore, some of the students shared the importance of verbal presentation of their work: "I enjoyed the class interaction and the opportunity to always present our assignment work."

"This course was very well organised. We knew

what topics were being covered in each class ahead of time, and for each topic, there was a very thorough Moodle page with pre reading or watching. Class notes questions and key points that would appear in the exam later I enjoyed the supplementary material I believe it will help me greatly in Crit 2."

"[The lecturer] has done everything in her power to make the material clear to us and help us engage with it. I can see why the Design Studio students all want her as their tutor and hope I have her as a lecturer for some of my papers next year!"

An interesting link to studio was identified in one of the students' comments, where a student referred to the name of Critical Studies 1 as "Critical Studio". The student notes, "the course was structured around the influences of how the practice of architecture began ... (which makes sense because it was critical studio 1)". Such mixing of the titles of critical studies and design studio may indicate a strong link in the student's mind between these two courses.

Conclusion

This paper has identified the key pedagogical interventions employed in Critical Studies 1, a first-year architectural history course in the Bachelor of Architectural Studies at Unitec Institute of Technology. In this course, we moved away from teaching approaches traditionally relied upon in architectural history and instead focused on: content and interaction through questions/problems: video + questions, interactivity (with others) focus: facilitated synchronous discussion; critical thinking: response to an assigned video/short text;

VENUSTAS

- What was the height of the first one?
- What is it called?
- What was the function of that huge building?
- What we can learn about Egyptian peoples' understanding of the world from that?

VENUSTAS

- What is the overall shape of the first pyramid in Saqqara?
- And the one in Dashur?
- And the famous ones at Giza?
- How did the shape of pyramids that we know today develop? (approx. 9 min 00 sec)
- Notice that people in Egypt made some beautiful columns attached to the walls of different buildings in the complex at Saqqara (approx. 18 mins 20 sec) (approx. 20 min 20 sec)
- What did Egyptians "imitate" while making those beautiful columns?

We will discuss these at the start of our lecture.

The Pyramid of Pharaoh Djoser at Saqqara

The Pyramid of Pharaoh Djoser at Saqqara...

Fig.03 Blended learning activities (Pre-class screen shot with annotations; from CS1 Moodle page).

ARCH5311 - Critical Studies 1

Activity 2 – ID Test Quiz. Example showing question

Question 1

What is the overall shape of the first pyramid in Saqqara?

Answer: []

Building name: []

Location: City: [] Country: []

Date: []

Check

Fig.04 Online quiz activity (Pre, Post and During-class screen shot with annotations; from CS1 Moodle page).

production: oral summary/presentation; written essay; drawing and reflection on learning. Using these strategies, we sought to emphasise the value and relevance of architectural history by making explicit the significant connections between it and contemporary architecture and design problem-solving processes. In this way, our work represents our intent to redraw the pedagogical boundaries between two threads of the architectural curriculum, which have often been thought about and taught as distinct areas. Through the presentation of our use of blended and flexible learning approaches, we hope to have provided a ‘map’ for other architectural educators interested in developing stronger connections between architectural history and practice to develop their own.



Fig.05 Individual Wiki and Discussion forum activities (Post-class screen shot with annotations; from CS1)

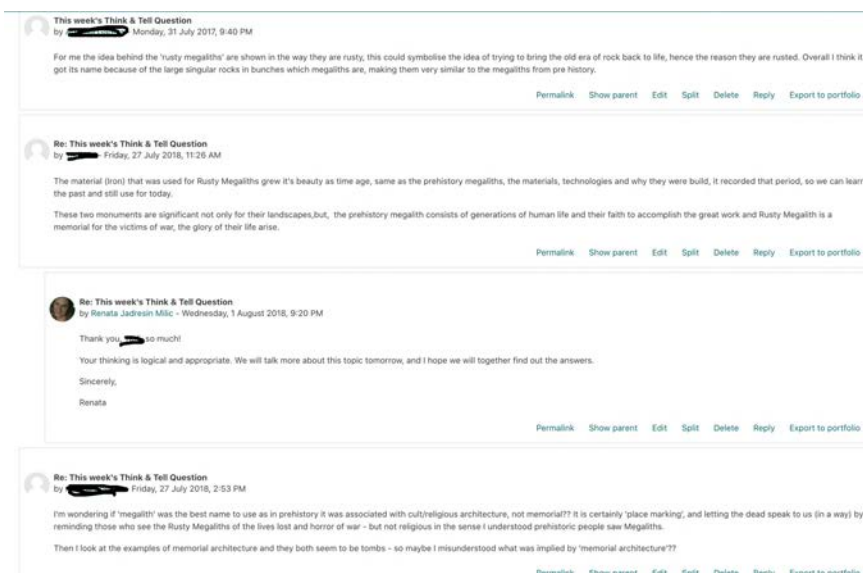


Fig.06 Discussion forum activities (Post-class screen shot; from CS1 Moodle page).

Notes

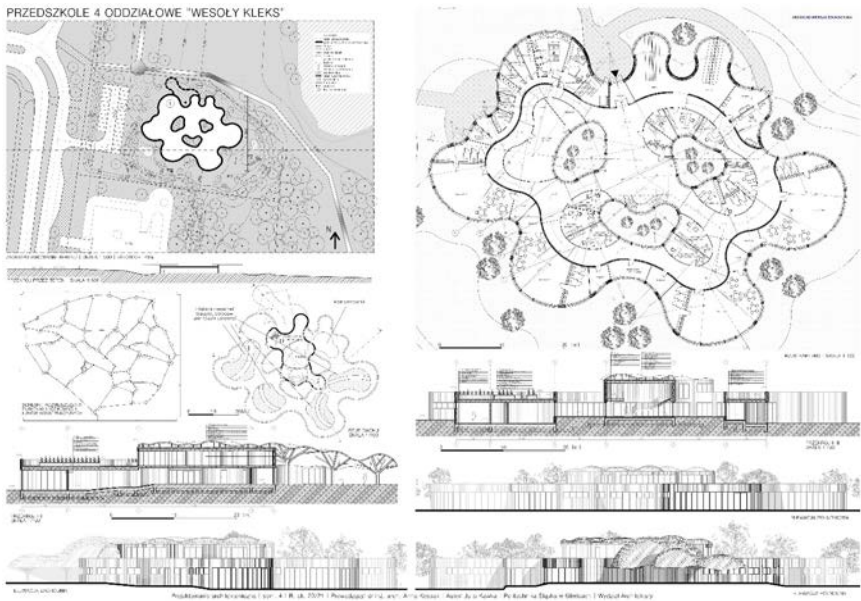
¹ The Unitec School of Architecture is accredited to the Commonwealth Association of Architects (CAA). Its discipline base springs from the criteria developed by the CAA and endorsed by the NZ Registered Architects Board and the New Zealand Institute of Architects.

Bibliography and references

- Abeysekera, Lakmal, and Phillip Dawson. 2015. 'Motivation and Cognitive Load in the Flipped Classroom: Definition, Rationale and a Call for Research', Higher Education Research & Development, 34.1: 1–14 <https://doi.org/10.1080/07294360.2014.934336>
- Bloom, Benjamin S. (Benjamin Samuel). 1956. *Taxonomy of Educational Objectives; the Classification of Educational Goals*, (New York: Longmans, Green)
- Bransford, John., National Research Council (U.S.). Committee on Developments in the Science of Learning., and National Research Council (U.S.). Committee on Learning Research and Educational Practice. 2000. *How People Learn : Brain, Mind, Experience, and School* (National Academy Press)
- Brookfield, Stephen. 2012. *Teaching for Critical Thinking : Tools and Techniques to Help Students Question Their Assumptions* (Hoboken, NJ: Jossey-Bass)
- Brown, Brené. 2012. *Daring Greatly : How the Courage to Be Vulnerable Transforms the Way We Live, Love, Parent, and Lead* (New York: Gotham Books)
- Ching, Francis D. K., Mark. Jarzombek, and Vikramaditya. Prakash. 2007. *A Global History of Architecture* (Hoboken, NJ: J. Wiley & Sons)———. 2011. *A Global History of Architecture*, 2nd edn (Hoboken, NJ: Wiley)
- Cohen, Louis, Lawrence Manion, and Keith Morrison. 2011. *Research Methods in Education, 7th edn* (Abingdon, United Kingdom: Routledge)
- Cope, Bill, and Mary Kalantzis (eds.). 2015. *A Pedagogy of Multiliteracies : Learning by Design* (Houndsmills, United Kingdom)
- Costanzo, Denise. 2016. *What Architecture Means: Connecting Ideas and Design* (New York, NY: Routledge, Taylor & Francis)
- Fink, L. Dee. 2003. *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses* (San Francisco: Jossey-Bass)
- Godlewski, Joseph. 2019. *Introduction to Architecture: Global Disciplinary Knowledge* (Cognella)
- Richardson, Jennifer C., and Karen Swan. 2003. 'Examining Social Presence in Online Courses in Relation to Students' Perceived Learning and Satisfaction', *Journal of Asynchronous Learning Networks*, 7.1: 68–88
- Van Sickle, Jenna. 2016. 'Discrepancies between Student Perception and Achievement of Learning Outcomes in a Flipped Classroom', *Journal of the Scholarship of Teaching and Learning*, 16.2: 29–38 [accessed 18 May 2019]
- Society of Architectural Historians, 'Publications: Past Conferences', 2019 <https://www.sah.org/conferences-and-programs/past-conferences>
- Spector, J. Michael. 2016. *Foundations of Educational Technology: Integrative Approaches and Interdisciplinary Perspectives* (New York: Routledge)
- Westermann, Edward B. 2014. 'A Half-Flipped Classroom or an Alternative Approach? Primary Sources and Blended Learning', *Educational Research Quarterly*, 38.2 (Educational Research Quarterly): 43–57 [accessed 19 May 2019]
- The structure of the city of Zabrze case study website: <http://urbanmodel.org/en/models-of-the-structure-of-the-city-of-aachen-2/> [access 2021.07.04] Video: [access 2021.07.04] Exhibition streaming: <https://youtu.be/a9qQA-lrOW4> [access 2021.07.04]

Anna Kossak
**Evaluation of the current situation of distance education,
with reference to the own academic practice.**

Silesian University of Technology, Poland



I work at the Silesian University of Technology Faculty of Architecture in the Department of Residential and Public Utility Architectural Design, where I teach design classes (Design of Single Family Houses in the 3rd semester, Design of Small Service Objects in the 4th semester, Design of Large Service Objects in the 7th semester for full-time and part-time students, as well as design and seminar classes for the Master's degree. Having worked remotely (100%) with students for 3 semesters, I came to the following observations about education in this mode:

NEGATIVES:	
Tutors:	Students:
In the first semester of working remotely - a definite extension of time of preparing for classes, so that the meeting with students won't extend beyond the designated hours according to the timetable (the need to download files sent by students, make corrections to drawings in graphics programs, save the corrections made during the classes and send drawings to students after meeting with them at ZOOM) - instead of e.g. 5 hours planned, you had to devote additional 7-8 hours of work per class.	If the instructor failed to correct drawings before class, the class meeting dragged on well beyond the hours allotted for it according to the schedule, making them waiting for the correction much longer.

Fig.01 Sample Technical Board – Preschool, author: stud. Julia Kawka, tutor: Ph.D. Eng. Anna Kossak

No opportunity to work together with the student on spatial models of the projects, which are extremely important in the phase of project conception and their correction. The only thing left to do was to discuss their preview on the ZOOM cameras or correction of the sent drawings.	Working on spatial models severely hampered and prolonged by not being able to modify them, in collaboration with the instructor in the classroom.
Lack of direct contact and interaction with students, getting to know them better, reading signals they send through their body language.	Lack of direct contact with the instructor and especially with other students. It is known that for young people the period of studies is a time of making acquaintances, friendships, love, stimulating each other to joint activities at the university (e.g. competitions, work in scientific circles) and outside it (e.g. joint events, outdoor trips), mutual stimulation through the exchange of views in an unforced manner, because it results from being in each other's company naturally.
Increased working hours, mixing private time with work time, as many meetings, gatherings and consultations now take place in the afternoon and evening.	Increased availability of tutors for additional consultations, especially for final consultations just before handing in drafts, which often end as late as the morning before the hand-in deadline.
POSITIVES:	
Tutors:	Students:
Becoming familiar with new remote communication tools: ZOOM, BigBlueButton, Microsoft Teams, and more frequent use of the Remote Education Platform (RES).	Becoming familiar with new remote communication tools: ZOOM, BigBlueButton, Microsoft Teams, and more frequent use of the Remote Education Platform (RES).
In the second semester of remote work - thanks to the fact that employees were equipped with graphic tablets, classes could be held only during the hours designated for them in the timetable, because there was no need to prepare in advance for meetings with students and corrections of drawings took place directly in front of them, just as during the classes.	Getting used to taking Print Screens from the screen on a regular basis and even recording consultations on directly revising their drawings, so they don't miss comments on their projects. Not having to print project drawings for every consultation, which generates a lot of cost.
Some of the comments on the projects are universal, so the instructor can address them to all the students in the class when discussing someone else's project. The class becomes fuller and more intense because students can learn from each other's thinking, work, and creativity, and the instructor can draw them naturally into discussions of each other's projects.	In a classroom setting, the proofreading of project drawings takes place right next to the student, making it physically impossible for the others waiting their turn to observe the work of others. By having a glimpse of their groupmates' projects, this waiting time is filled with the additional learning that comes from being able to see what ideas others have, how they work, they can share their ideas and comments on other work, and they can compare themselves to them.

Evaluation of student work at the end of the semester is more comfortable, as it does not require prior individual assessment by the instructors while wandering around several rooms to look at printouts of the project boards, before the whole committee meets and averages the proposed grades for the projects. Their presentation now takes place at ZOOM in the presence of the entire committee, with additional commentary by the presenters on the work of his group, and the grade is given together immediately afterwards.	Students do not have to print out their designs and tape them to foam boards, which is an expensive part of studying in the Architecture Department. Students can look at other students' final design boards, hear comments on them, learn from their own and others' mistakes, understand and get more of a feel for the ideal they should strive for in the creative design process by comparing the ideas and ways of final presentations of other students' work with their own.
Not having to commute and time spent on it can be used for other activities.	Not having to commute to class and, in many cases, not having to rent a dorm room or a hostel reduces their cost of living significantly.

Technically speaking, the best performing methods in my department at this point, using the "Small Service" subject as an example, were:

- for the subject instructor-student interaction - communicating via the **Remote Education Platform** (which was already in place before, but has now further strengthened its task), where student could see all information about the subject, the project topics to choose from, the conditions for passing, the grades for: the clauses, the 2 reviews and the evaluation of the technical board and the cumulative board and, at the end, of the pass colloquium.
- for the project leader-student interaction - communication via e-mail, **capacious e-mail boxes on mailbox wp.pl** separate for each subject and for each staff member (as well as separate with the staff mailbox on domain polsl.pl, so that the information does not mix), to which students send 1 chart in jpg format (maximum size 10000 pixels/7000 pixels horizontal alignment, file size up to 10 MB and signed: Surname_First name_Consulting_Date) prior to the start of class. The classes themselves were held remotely in virtual meeting rooms created in Zoom. During the classes students could correct the submitted drawings using a graphics program such as Paint, or by using the drawing tool directly in Zoom. During consultations, students recorded the results of the correction (or its stages) on their own, through a print screen. The WACOM One Creative Pen Display **13.3" graphics tablets**, which all the staff of my department were equipped with, turned out to be a huge help in their work. Reviews of work progress were conducted in the same manner, but in the presence of 2-3 instructors

and students from their groups. The students then uploaded the boards for grading and enclosure assignments to the Remote Learning Platform as well.

- The project was submitted in two stages - two weeks before the end of the semester "Technical Boards" were evaluated, and at the end "Summary Boards" completed with sketches, generative diagrams, coloring, visualization. They were sent not only to the teachers but also to REP, both in pdf and jpg format (jpg - maximum size 10000 pixels/7000pixels file size up to 10MB, pdf - maximum size 100cm/70cm file size up to 10MB, signed: Surname First name subject technical board.pdf/jpg, Surname_First name_Subject_Technical Board_pdf/jpg or: Surname Name subject summary board.pdf/jpg Surname_First name_Subject_Summary Board_pdf/jpg), with the TB set horizontally and SB set vertically. TB were graded in subsets as on the reviews, SB by all presenters without student participation. After the designated turn-in time, group leaders uploaded work from their students to an external Google Drive created by the subject instructor, divided into subject directories. From the starting time of the class, the team of instructors had 2 hours to evaluate all the work independently, after which the entire team met in the subject instructor's meeting room created on Zoom and evaluated together the projects displayed by the instructor one by one. Dividing the evaluation of the projects into two stages, the Technical Board and the Summary Board, allowed for a more in-depth evaluation of the projects in terms of the technical correctness of the drawings, and then in terms of the readability of the idea or the attractiveness of the project

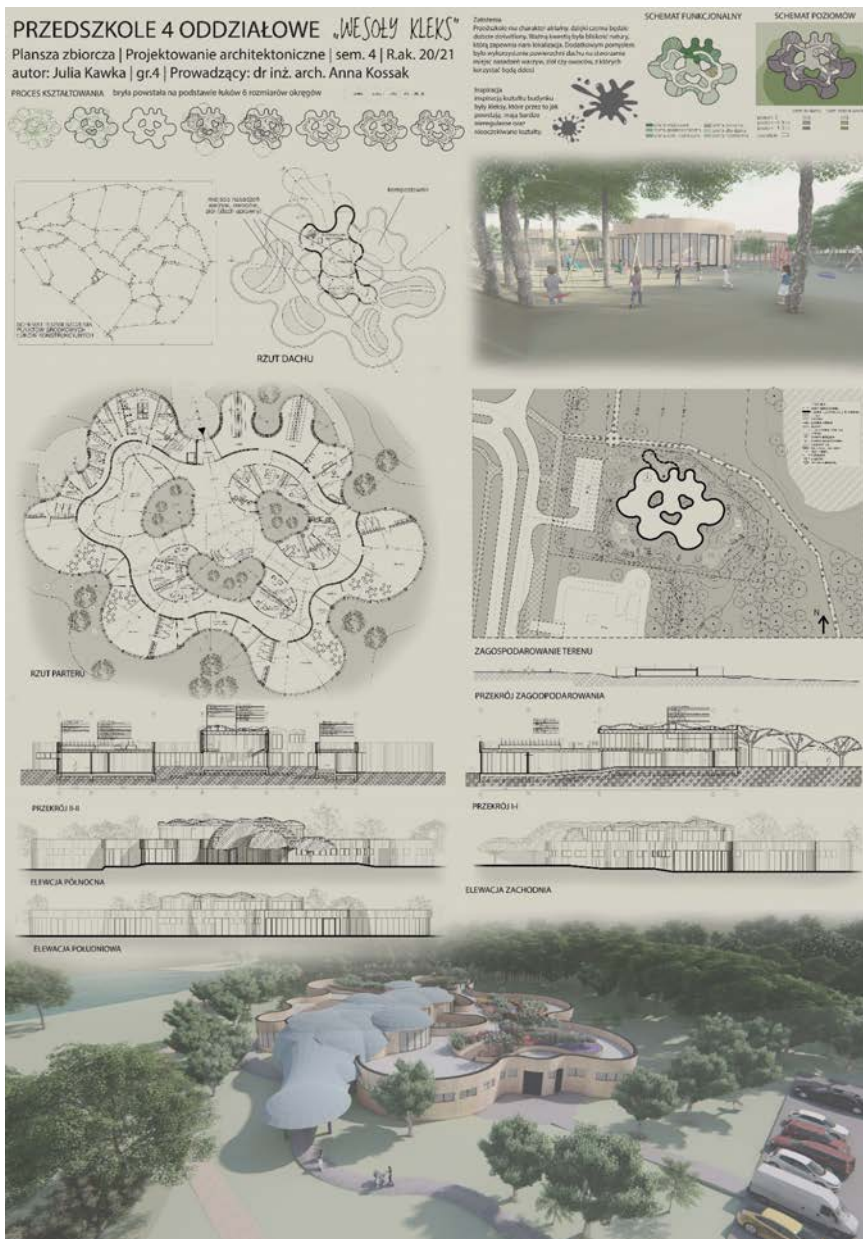


Fig.02 Sample Summary Board - Preschool, author: stud. Julia Kawka, tutor: Ph.D. Eng. Anna Kossak

presentation. Single boards of sufficient resolution (especially those of horizontal orientation) improved the presentation of the project, which in previous years was printed on 2-3 such boards (to maintain the legibility of drawings).

- The presentation of work (and its archiving) is facilitated by the fact that all projects are available to anyone interested on an external Google Drive.

Summary

At the end of another semester of working remotely, we have not noticed a decrease in the quality of student work compared to previous years. Very quickly, my faculty members transitioned to teaching remotely, so the summer semester work in 2020 ended on schedule. Many of the solutions shortened the time of work (no need to commute), reduced costs (in addition to the lack of commuting or renting student rooms also the need to print projects), made the classes more attractive (students could follow the progress of their groupmates). However, there was a definite lack of personal contact between the instructor and the student (especially at the initial stage of working on the spatial model during the exploration and formation of concepts). There was also a lack of direct interaction of students with each other, which promotes informal exchange of ideas, mutual inspiration to work together. Contact classes, despite the indisputable benefits noted with remote classes, create a unique atmosphere and bring invaluable benefits. As a lecturer at the Faculty of Architecture for many years, I believe that the most beneficial form of conducting classes would be classes in a hybrid mode, and remote-only classes should only be conducted in a crisis situation, similar to the current coronavirus pandemic.

Özlem Erdoğan Erkarıslan, Yenal Akgün*
Design and implementation of online learning process for complex architectural projects: a graduation project example during Covid-19 period

*Istanbul Aydın University, Turkey
 Yaşar University, Turkey*

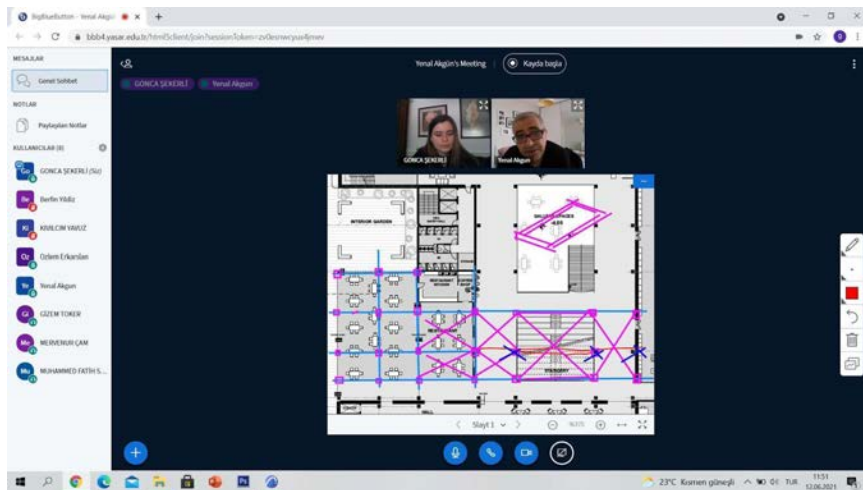
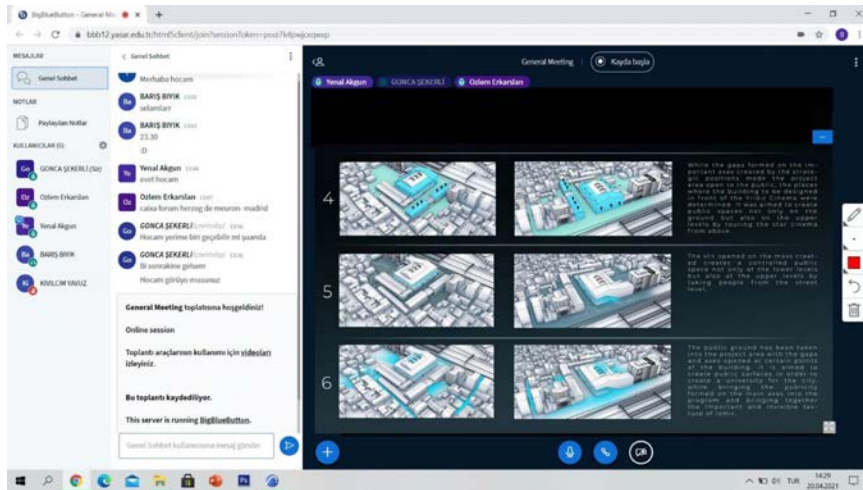


Fig.01 Site Survey Presentations and Given Site View Template
Fig.02 Sakai LMS Interface for Online Review Sessions

Introduction

Architectural design studio is the most important course of architectural education and it is considered the central axis where the theoretical and technical knowledge obtained from other courses are brought together. This design studio is a form of disciplinary training in a social learning environment, where the instructors and students interact. In this environment, students learn from the instructor, as well as from each other; and nourish their creativity through experience and learning by doing (Ceylan et al, 2021).

As an alternative to the conventional face-to-face design studio environment, new instruments and concepts, such as blended learning, virtual studios or online studios have emerged in recent years, parallel to the advancements in computer and communication technologies (Silva & Lima, 2008; Bacelar-Nicolau et al., 2009). Although the research studies and attempts on distance or blended learning systems were incipient in architectural education, after the declaration of COVID-19 as a global pandemic on March 11, 2020 by the World Health Organization, the remote learning aspect became the most important element of the architectural design studio.

Many researchers have evaluated the success of the distance learning methods and tools during COVID-19 period by making questionnaires with the instructors and students (Alnusairat et. al, 2021; Varma & Jafri, 2021; Asadpour, 2021). Recently, some studies have also evaluated the methodologies, capabilities, and shortcomings of the online tools (Milovanović et al., 2020; Ceylan et al, 2021) and searched for different options.

Although the existing literature hints at various methods of measuring the efficiency of online

learning tools on theoretical courses or short design problems, we still do not have a full-fledged, differentiated examination of the use of “learning management systems” for conducting complex and long-term architectural problems like a graduation project. This gap in the literature constitutes the main motivation of this paper.

A graduation project is the most important step in architectural education because it tests out the maturity of a student of architecture as a potential architect, and includes multilayered difficulties and expectations on the building and site. In the case of Turkey, graduation projects are considered particularly decisive due to the terms and conditions of professional service of architecture is regulated by the Chamber of Architects in Turkey, which allows four-year bachelor degree holders to work as registered architects without any other obligatory competency exam or internship requirements. For this reason, when online education became a requirement during the 2020-21 academic year, time-management and the restructuring of the studio became an asset to ensure a workflow would continue to run like clockwork as in the face-face education.

This paper aims to express the progress of an online graduation studio experience via the Sakai Learning management system (LMS). Moreover, it elaborates the defining attributes of the tools and online learning methods that were used during the semester; and reveals their potentials and shortcomings.

Definition of the Studio

Based on the catalogue description, the graduation studio at Yaşar University is defined as a 10 ECTS course and organized in (4+4) eight contact

hours, with a main learning mechanism of solving an architectural problem that is functionally, conceptually, contextually or structurally complex, in a remarkable urban context. In the 2020-21 academic semester, 28 students were enrolled in the course to be supervised by two professors. The studio problem was given as an adaptive reuse project transforming two existing and unused buildings into an architecture school, which brought some challenges as well as practicalities. Adaptive reuse projects always mean extra workload such as documenting and adjusting the accuracy of the measured drawings, which cannot be done without on-site surveying. Additionally, this kind of studio problems need a detailed and sensitive approach to the structural, tectonic integrity and carefully considered materiality.

On the other hand, the well-defined boundaries of the plot and existing structures provided a guideline for the students while experimenting with spatial and structural alterations.

Definition of the Learning Medium

Sakai is a free, community source, educational software platform designed to support teaching, research and collaboration (Sakai LMS, n.d.). This platform is an inclusive learning management system allowing different types of online meetings, exams/ assignment submissions, forums, chats, mail groups allowing online interactions, grading, announcements etc., without need for extra supplementary tools and software packages.

Since the Sakai platform is the official learning platform at Yaşar University, and had been in use for uploading the course materials, assignments, grades, resources and announcements long before the Covid 19 zero point (11 March 2020), the university management decided all courses to be offered under the same platform.

Definition of the Tools

Site Surveying Supplementary Materials: at the beginning of the project, the students were provided with the measured drawings of the existing buildings, which were formerly documented by Izmir Municipality since it is also in the agenda of the local government to transform these two buildings into a cultural center. A small group of students paid a visit to the site and shared the camera of their phones via connecting to Sakai System when at the same time the entire group was online in the breakout rooms and ready for graphical documentation of the site visit via working on a shared holder. Therefore, the Sakai system enabled students to still have the spirit of teamwork and doing actual site surveying. The warm-up and analysis phase was also supported by many other online activities such as communicating with Lead Architect of the department of Heritage of Izmir Municipality as well as online viewing and conducting discussions with the director of the documentary film about the existing buildings on the site. A template was given to the students for the site analysis In Figure 1; this perspective template can be seen on a student's online presentation.

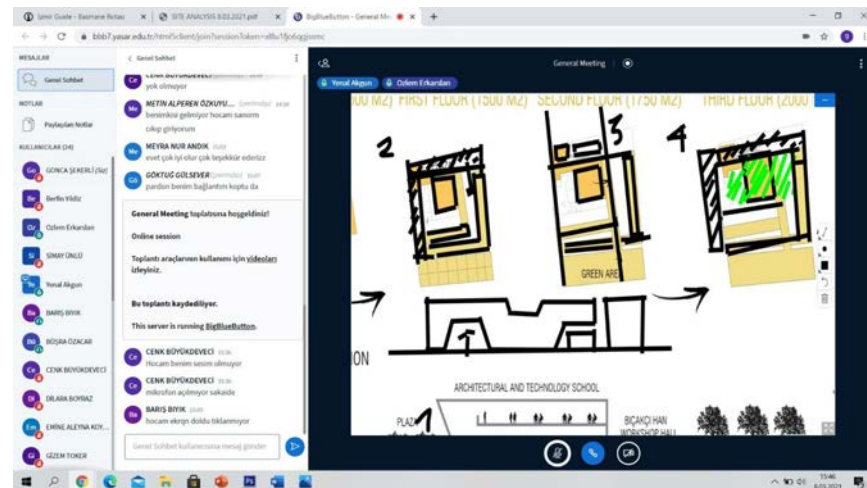


Fig.03 Sakai LMS Interface for Online Review Sessions

Tools for Critics: the studio was organized predominantly along with one-to-one critics within the studio hours during which the entire group could discuss together, except the students who specifically asked for private critique sessions. Sakai LMS allows users to sketch over the existing drawings and this increases the communication between the instructors and the students (Fig. 02-03). The students were rotated between two professors, which was regulated and announced by the studio team in Sakai System at the beginning of each week. On the other hand, some joint sessions brought forth an exchange of ideas in a larger group and strengthened the good spirit of the studio when everybody was in need of care, sympathy and affection. Use of Sakai Forum and WhatsApp group was efficiently used for casual communication, which allowed for flexible working hours and strengthened interpersonal relations despite the difficulties of the online process.

Templates of Visual Communication: a conventional architectural representation is based on presentation boards/ sheets that include diagrams, all drawing sets and visualizations and one or more physical models depicting the mass. However, on-line screening of such presentations can be deceptive and may cause misreading of the drawings in the absence of drawing scale and physical models. In order to solve this problem, the studio team asked students not to prepare presentation boards in A or B paper sizes, and used a template slide format with 16:9 ratio, which is

an international standard for most laptop and monitor screens. Location, orientation and size of each drawing were defined in this template. This template increases the accuracy of the communication. Furthermore, all students were encouraged to use similar perspective views as can be seen in Table 1 below. The templates were very efficient for interim desk reviews when the student was in need of introducing the project but cannot find an appropriate diagram language and/ or verbalize their concept smoothly.

Tools for Assessment and Self Evaluation: the studio team recorded the sessions as much as possible to provide an easy access and recovery of the reviews when the student or the studio team felt any doubts about the agreement. Chat box was used in the juries simultaneously as the guest jurors were speaking to insert a brief about the comments. In this way, the student was able to read the comment before replying (Fig. 04). The students were also encouraged to use self-evaluation check-lists, which were included in every submission package which were simple questionnaires covering basic and minimum requirements expected from them which they can assess their self-evaluation over 5-scale Likert scale.

Conclusion

The tools of Sakai LMS allow students and professors to sketch over the projects during the online contacts. Forums and chat tools allow file sharing, comments and interaction, which makes the use of all communication tools to be transformed

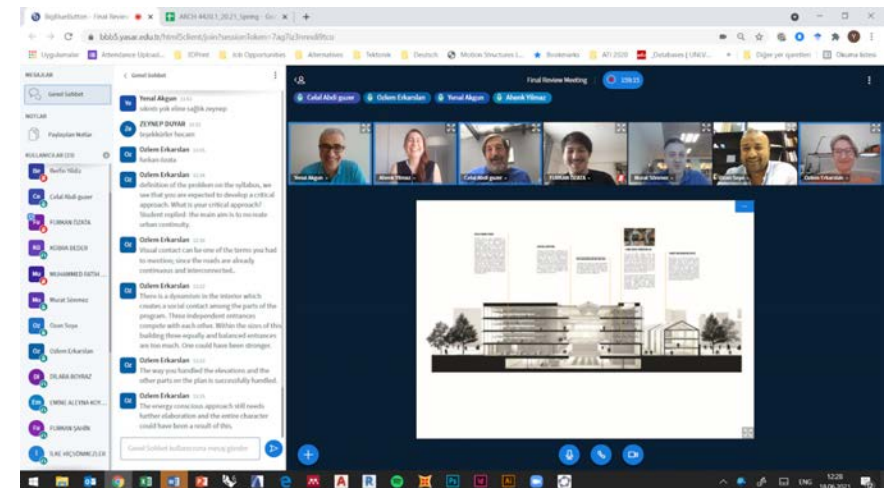


Fig.04 Use of Chat box as a Brief during the Online Reviews

into the digital platform. At the end of the studio, the course has received 4.95/5.00 grading from the student evaluations based on the effective use of the platform by incorporating all of its tools, which ensured the fulfillment of all tasks expected from a professional architect into the students' design proposal. The student evaluation score in the last face-to-face final project studio of the same project team was 4.52/5.00. This difference in student grading also indicates the efficiency of the conducted methodology.

*
Özlem Erdoğan Erkarıslan,
 İstanbul Aydın University, Department of
 Architecture, Address: Beşyol Mah. İnönü,
 Cad.No:38, Sefaköy-Küçükçekmece, İstanbul
 (oerdogduerkarlan@aydin.edu.tr)
Yenal Akgün
 Yaşar University, Department of Architecture,
 Address: Üniversite Caddesi No:37-39 Bornova,
 İzmir, Turkey
 (yenal.akgun@yasar.edu.tr)

Bibliography and references

- Alnusairat, S., Al Maani, D., & Al-Jokhadar, A. (2021). *Architecture students' satisfaction with and perceptions of online design studios during COVID-19 lockdown: the case of Jordan universities*. Archnet-IJAR. <https://doi.org/10.1108/ARCH-09-2020-0195>
- Asadpour, A. (2021). *Student challenges in online architectural design courses in Iran during the COVID-19 pandemic*. *E-Learning and Digital Media*. <https://doi.org/10.1177/20427530211022923>
- Bacelar-Nicolau, P., Cacião, S., Martinho, A. P., Azeiteiro, U. M., & Amador, F. (2009). *E-learning for the environment: The Universidade Aberta (Portuguese Open Distance University) experience in the environmental sciences post-graduate courses*. *International Journal of Sustainability in Higher Education*. <https://doi.org/10.1108/14676370910990701>
- Ceylan, S., Şahin, P., Seçmen, S., Somer, M. E., & Süher, K. H. (2021). *An evaluation of online architectural design studios during COVID-19 outbreak*. Archnet-IJAR. <https://doi.org/10.1108/ARCH-10-2020-0230>
- Milovanović, A., Kostić, M., Zorić, A., Dordević, A., Pešić, M., Bugarski, J., Josifovski, A. (2020). *Transferring COVID-19 challenges into learning potentials: Online workshops in architectural education*. Sustainability (Switzerland). <https://doi.org/10.3390/su12177024>
- Sakai Learning Management System. (n.d.). Retrieved July 15, 2021, from <https://www.sakailms.org/>
- Silva, N. F., & Lima, E. M. (2008). *Distance learning in architectural design studio: Two comparative studies with one onsite teaching*. *Innovative Techniques in Instruction Technology, E-Learning, E-Assessment, and Education*. https://doi.org/10.1007/978-1-4020-8739-4_66
- Talib, C. A., Aliyu, H., Malik, A. M. A., Siang, K. H., Novopashenny, I., & Ali, M. (2019). *Sakai: mobile learning platform*. *International Journal of Interactive Mobile Technologies*. <https://doi.org/10.3991/ijim.v13i11.10800>
- Varma, A., & Jafri, M. S. (2021). *COVID-19 responsive teaching of undergraduate architecture programs in India: learnings for post-pandemic education*. Archnet-IJAR. <https://doi.org/10.1108/ARCH-10-2020-0234>

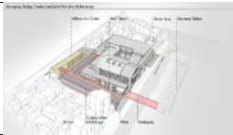
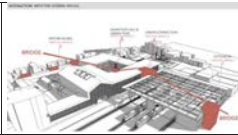










Interaction with the Citizens	Urban Scale			
	Architectural Scale			
	Supporting small business and workshops in the neighborhood			
	Scan the QR Code for the Full Project Presentation			

Table 1. Diagrams Explaining the Urban Interaction on Template Perspective Views

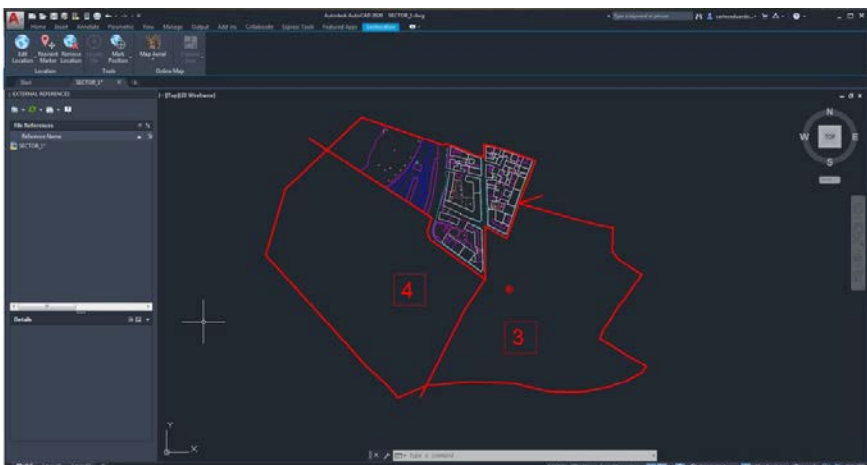


Fig.01 View of Knowledge of the city trip

Fig.02 Working on common model: division of the sectors

DOI: 10.12838/fam/issn2039-0491/n0-2021/824

Veronica Ferrari

Architectural Design Studio activities in times of pandemic. Alternative models and tools for managing mixed-mode teaching.

Polytechnic of Milan, Italy

This contribution deals with the experience of the Architectural Design in Historical Context Studio held by professors Luigi Spinelli, Barbara Bogoni and Eduardo Souto de Moura, that takes place in the second semester of the first year of the Master of Science in Architectural Design and History - AUIC school of the Politecnico di Milano.

The course, held in English, is part of an international program that welcomes students from all over the world, offering them the opportunity to fully experience the integration of the different disciplinary components of design practice.

The course aims to learn the fundamentals of architectural design and the application to the historical context of the city of Mantova of the theoretical, analytical, historical and instrumental knowledge that students have had the opportunity to develop and increase during their studies, to reach the definition of an architectural project developed in all its parts.

The course was held in combined sections with about 40 students each, who are engaged in carrying out individual research and group project activities. The course activities were carried out by adopting innovative teaching methodologies - *flipped blended classroom* - alternating face-to-face and remote activities. The Microsoft Teams platform - for lectures, presentations, collective reviews and conferences - and the Beep platform - for the sharing of materials by the teachers, the delivery of documents by the students and the management of notices were used to the course.

Of particular importance was the participation in both sections of an international building design teacher such as Eduardo Souto de Moura and with the collaboration of the architects Nuno Graça Moura, Joao Pedro Falcao de Campos, Joao Mendes Ribeiro

who dedicated themselves to following the activity planning of the second part of the course.

The calendar of activities included introductory lessons on the Portuguese territory to give students the basis to undertake an individual study and research work, in which each of them had the task of deepening a work of contemporary Portuguese architectural design in a historical context. In parallel we also worked on the study of the historical context of the city of Mantova, through lessons on the history and morphology of the city - also held by external guests particularly competent in the sector - and through study activities through sketches and redesign of the most important buildings and architectural complexes of the city. This activity, called "Knowledge of the city" was carried out in two different ways depending on the ability of the students to participate in the activities in the presence or not. For the students present in Mantova, were organized trips through the streets of the city during which each student illustrated the building object of his personal research to his classmates, followed by moments dedicated to the design and representation of the compositional and architectural characteristics of the artefacts; for distance students, on the other hand, materials relating to the case studies assigned to them have been prepared - shared through Beep - useful for independently reproducing the same type of exercise.

All the work of acquiring knowledge was preparatory to the development of the project, whose theme was the redesign of a side of Piazza Carlo d'Arco in Mantova with the insertion of a collective building, conceived as a functional space for the use of the university and at the same time also of the city.

The calendar of activities sees the intensification

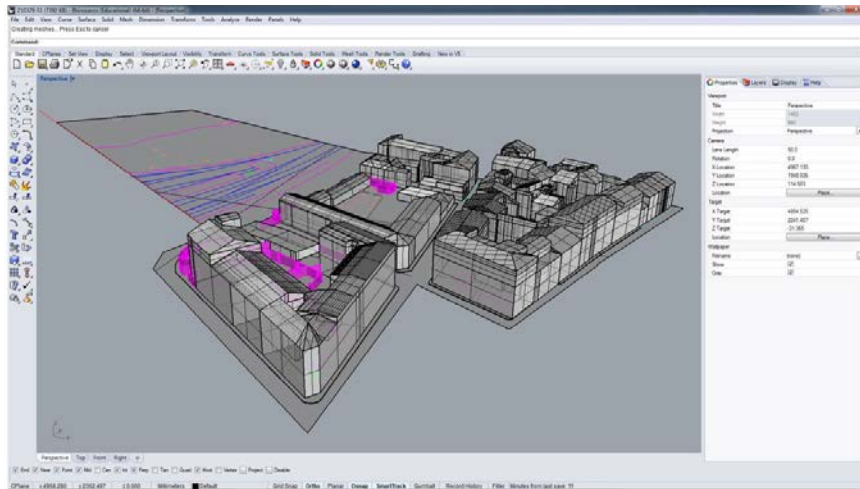


Fig.03 Working on common model: sector 1 progress with roof and sidewalk

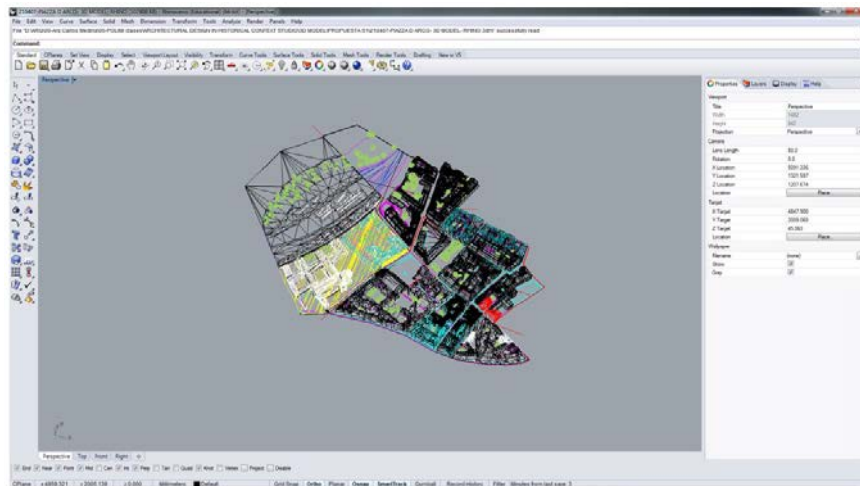


Fig.04 Working on common model: the first attempt on merging files

of activities in May, an intense and important month for all the students and teachers of the Politecnico di Milano and for the city of Mantua, where the Mantovarchitettura program takes place every year, a review full of events and conferences organized by the Polo Territoriale di Mantova - with two intensive weeks, interspersed with a week of rest during which an intermediate review took place, during which students and teachers work assiduously on the project. The lectures, held in part in the presence and transmitted in real-time within

the virtual classroom of the course on the Microsoft Teams platform, or remotely, were followed by the students through their personal devices. The tools provided by the platform allowed not only to follow the lectures of the teachers and guests but also to ask questions, create discussions and share opinions from all the participants.

The use of the Teams platform was also essential for managing the creation of a common model of the project area, which was initially planned to be physically built, but due to the pandemic, it was

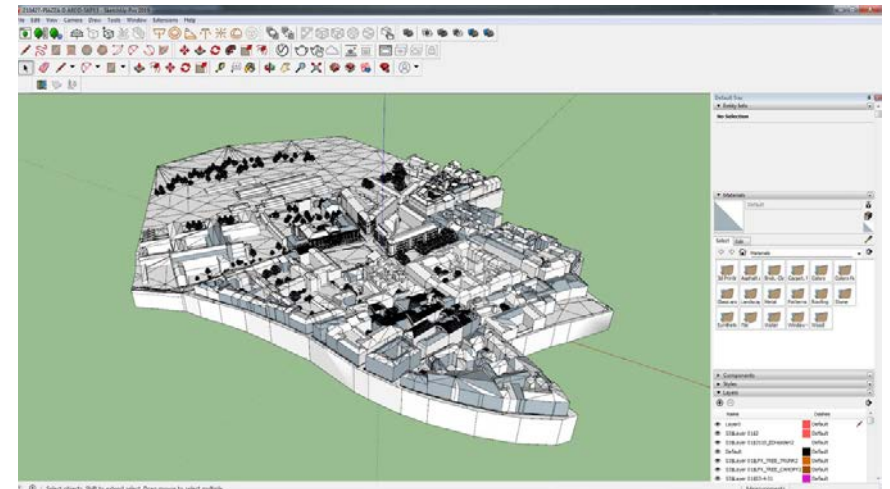


Fig.05 Working on common model: final result of the model and creation of a common tool

necessary to opt for a virtual 3D model. One student per group participated in the creation of the virtual model, working together to define the volumes and surfaces that form the context of Piazza d'Arco and its surroundings. Starting from a CAD cartographic base, the students - guided by assistants - selected the levels and information of interest to them, proceeding with the gradual construction of the virtual elements of the model. The work was managed through weekly appointments held within the virtual classroom on Teams, in which operational methods, technical and practical doubts and the degree of definition and detail that this tool should have achieved were discussed. The 3D model was created using modelling software such as AutoCAD, SketchUp and Rhino. The result was very satisfying, both from a practical and a graphic point of view; it helped the students to learn to divide the work and to coordinate in a common line for the construction of a shared design tool.

The result was very satisfactory, both from a practical and a graphic point of view; it helped the students to learn to divide the work and to coordinate in a common line for the construction of a shared planning tool. The use of technological tools, and in particular of virtual classrooms, has made it possible to carry out easily, even if not exhaustively the reviews: there was the lack of possibility of acting directly on documents with indications and corrections - pencil on the paper - as is usually done for project activities. To make up for this lack, however, students and teachers have worked hard

to find different communication techniques, from the most conventional scans or photos of materials to the use of whiteboards and graphic supports on which to draw in real-time and view comments on the video.

Unfortunately, however, there are issues related to the genesis of the project that technology is not yet able to deal with correctly: the management of the scale of the drawing and of the different information at each scale which - working on the computer, without being able to have a formalization on paper - is presented very problematic. «The design must consist of a *continuous passage*, from one to another scale, precisely because the tests adopted at one or another scale (examining a single parameter, or two, or three at the same time) must be verified at a different scale»: with these words Ludovico Quaroni (2001, p.54) raises the question of the need to work parallel to the different scales, juxtaposing sheets with different designs, a habit that, the use of the computer and the possibility to zoom-in or zoom-out on the different contents, is modifying, making us partially lose the perception and the meaning.

These tools were however indispensable for managing relations and communications with Portuguese professionals who were unable to take part in the activities in person as was the case in previous years. Through a precise calendar of revision management and the creation of various virtual classrooms, students had the opportunity to better organize their time and to take advantage

of the contribution of each teacher. In this way, the students received continuous stimuli and discussions on the development of their project.

Part of the didactic activity was also the interventions and lectures by Eduardo Souto de Moura, Nuno Graça Moura, Joao Pedro Falcão de Campos, Joao Mendes Ribeiro - also included in Mantovarchitettura, recorded and available on the YouTube channel of the program - where the architects illustrated their projects to students and the public and reflected on their way of working and seeing architecture.

An interesting synthesis exercise, tested within the course in the first intensive week in May, was to invite the students of each group to represent through a floor plan their design idea on the blackboard. Each group, being able to draw only a few lines of chalk, was invited to carry out a synthesis process, to select and represent only the most important and distinctive elements of the project. This moment was also useful in defining the finished form of the project, putting a point in the progress of the design activity and inviting students to continue in the definition of the project, through the study of construction techniques, materials and

technological details.

In the same way, the precise organization of the times and methods of communication required by tools such as audio and video sharing platforms encouraged students to select the materials to be exhibited through the preparation of pdf or PowerPoint presentations and to optimize the storytelling of the project, also acquiring a critical eye towards their project and its explanation.

The richness of the course contents and the variety of educational activities offered - and the contribution of international architects - make this course a unique training experience, which due to an extraordinary situation such as that of a pandemic would have been impossible to carry out without the aid of the technologies described above and the great commitment of all the students, assistants and teachers who took part in the course; but it is important to remember how certain habits and certain methods of making and learning architecture cannot yet be replaced worthily by technology.

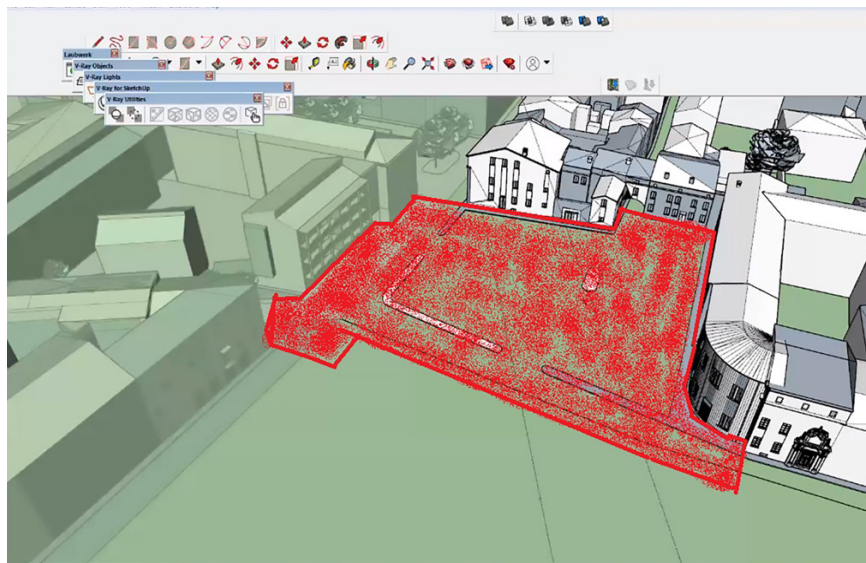


Fig.06 Use of the Paint program on 3Das tool to discuss about the project area



Fig.07 Students summarizing project ideas on the blackboard

Bibliography

QUARONI L. (2001), (1st. ed. 1977), – *Progettare un edificio: otto lezioni di architettura*. Edited by Gabriella Esposito Quaroni, Edizioni Kappa, Rome. Caption translated by the author.

Donatella Scatena, Zeynep Gulel, Sergio Amedeo Terracina,
Virginia Volanti
**The architectural plan: Teaching and learning methods in
social distance's times.**

Sapienza University of Rome, Italy



Fig.01 The Squares of Rome redesigned by the students of the Architectural Design Studio III (Left image owners: Francesco Andaman Paglici, Chiara Passagrilli, 2021- Right image owners: Marzia Rizzello, Maria Gaia Pontoni, 2021).

While the texture of urban life in Europe was going upset, a lot of operations ceased: for instance, hotel trades, enterprises, club meetings and leisure activities; other: for instance, banking, business dwindled and decreased.

Schools of every order and grade - and supermarkets, of course - had remained an almost unrivalled taken of group work. Education and vocational training – even if performed from a distance – has been a continuous motion flowing through the numbed body of towns and cities, sprinkling and brightening up day. Today activities and living up to same social expectation.

From the very outset, we were caught out by first lockdown in March 2020. At first, we cannot make sense of incident: we were worried at that personal and social issue, because this pandemic was spreading with dangerous swiftness.

For two months we had no choice but to stay at home. We kept on doing only the bare necessities. Just in March the second the second semester courses begin: with an interval of two days after the first lecture, we were forced to organize at home interim measures to provide for remote lectures of our undergraduates.

We were compelled to get quickly our act together, with the only teaching aid of our information knowledges. We eventually succeeded in solving that problem, carrying out our Laboratory of Architectural Design III, lecturing by webinar revising our undergraduate's submitted plans at the arranged time, i.e. : according to faculty's calendar, recording all those operation in e- learning.

We have adopted ourselves quite well to this circumstance, thanks to that technical implement: our practical teaching stems, indeed, also from our previous experience with pc and social media.

The absence of our undergraduate was became more marked, our lecture halls were empty- neither bodies nor souls. We were forced to revise undergraduate plan test giving up the pleasure of doing live teaching- therefore, all lacking in educational and human interplays.

In 2021 we have fallen again in the grip of pandemic. We were again confronted by that problem, yet this time the repeated utter shutdown hasn't made things quite awkward for us.

Sapienza has dated classrooms with suitable equipment, computers, cameras, personal microphones, zooms and dedicated meetings, so it was possible, as in our case, to teach constantly in the classroom. An institutional app allowed students to book the classroom of the course that could only be partially filled to ensure the right distance. The rest of the students alternately attended lectures and reviews from home. The classroom lesson always took place with a mask and without direct contact between us. We, teachers continued to lecture in the classroom even when the closure was once again total and only we were allowed to go to work: each entry into the faculty was documented by a special form issued by the University each time, for the traceability of movements.

We do not know if the course held in this academic year 2020/2021 is better or worse than the others: it is now important to explore this experience. With the Architectural Design Laboratory III we have accepted a bet, welcoming transformations and investing in change. And there were a few weeks, a few but incisive, where in the headquarters of the Faculty of Valle Giulia there was only one teacher per floor and the caretaker on the ground floor.

This anomalous and constricting situation inevitably led us to reflect on the concept of space and body

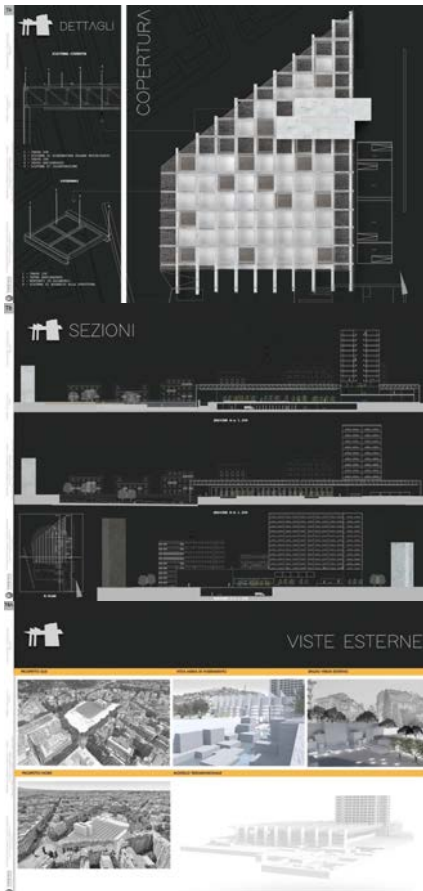


Fig.02 Project for a mixed-use center in Piazza Bainsizza in Rome (Image owner: Stefano Maiorano, 2021)

and stimulated us to bring the issues of isolation and a new vision of living into the laboratory. So for a month the students had to face an ex-tempore during which they had to imagine the squares and historical spaces of Rome: to think of them as deserted and wild after abandonment or to be reactivated with new post-pandemic and distancing uses. On the other hand, as a composition theme, the students had to deal with the typology of a complex building, also in the first city hall of Rome, which contained within it a large covered square overlooked by mini-houses, a social library, a market at km0, co-working, exhibition and wellness spaces: on the roof of gardens and even shared vegetable gardens. A large mixed-use that allows the inhabitants of the

neighborhood to be able to survive for some periods independently. Finally, the problem of the spatial confinement of our bodies made us understand that we could, however, go beyond the network and thus the International Seminar on architecture and the Baltic landscape was born which put us in direct contact with authors, architects, photographers and designers of Lithuania, Latvia, Estonia. The two closed seas of Europe have never been so close as in the period when the borders were closed.

The laboratory had an experimental character not only for the complex theme of urban transformation, mostly delivered at a distance, but because it was the subject of study by a student, Zeynep Gulel of the Ph.D. of the Mimar Sinan University of Fine Arts in Istanbul, Faculty of Architecture, Department of Interior Architecture.

Her thesis research examines the technological tools and methods used in the “measurement and evaluation” phases of student success in the “design studio courses” and suggests a new digital method. Our course, which the doctoral student has followed and monitored throughout the year, when it was also possible in the classroom, is part of her doctoral thesis. Below the PhD student reports a summary of her study (DS, SAT, VV).

The Architectural Design Studio III course continued the education with a system (mixed method) in which, physical studio environment and distance education were simultaneously managed, in the ongoing Pandemic period, in



Fig.03 International Seminar: Small Baltic Conversations

the spring academic term of 2020-2021. The precautions, taken to reduce the number of people sharing the same environment due to the pandemic, were provided by giving students the opportunity to access lessons remotely. Thanks to the cameras, speakers, microphones, projectors, computers and internet systems installed in the classroom, an average rate of 30% of the total students participated in the physical studio environment and 70% attended classes with remote access at during the academic term.

The executives and students provided the intersection in the same virtual environment, beside to the physical space, through the “Zoom” and “Google Meet” programs they downloaded on their computers, tablets or mobile phones. Remotely accessing students could interact with the participants in the physical environment,

preferably by opening their cameras or just with sound. The executives in the classroom contacted the participants who accessed the classroom remotely, with the camera, speaker and microphone set up. Each student presented their data related to the project to the executives, under the witness of their peers, by screen sharing on the virtual platform.

Participants in the classroom environment came to the lessons with their computers and tablets and connected to the common virtual platform. They also watched the images projected onto the screen in the classroom by the screens in front of them.

The interface of Zoom and Google Meet programs allows each participant to see the screen sharing, image of the presenting student, the number of participants to the platform, and to communicate in



Fig.04 Technological equipment installed in the classroom (Zeynep Gulel archive, 2021)

writing from the messaging section. On the other hand, the executives only verbally reported their criticisms over the student’s narration and the data they shared, without being able to mark them.

The characteristic atmosphere of the design studio, seen as a ‘studying and living space’, continued in this mixed system. While the interactive revision process continued on the digital platform, it was observed that other students in the studio listened to the peers’ evaluation process from time to time, continued their own work or helped with their peers.

The executives also gave revisions to the students in the physical environment through the traditional critical method, beside the digital platform. With this method, where one-on-one communication with the executive, which proceeds in the form

of desk and group critiques, students presented their work preferably in digital environment (on a computer or tablet) or with drawing or three-dimensional model studies on printed paper.

Students benefited from drawing and visualization programs such as Rhino, Archicad, Photoshop Autocad ... etc. as well as hand sketches in their project work. They sent the presentation sheets they produced in digital environment to the executives via e-mail for interim and final delivery. Each student has a membership in digital platforms called “E-Learning” and “InfoStud”, where they can log in with their university credentials as well as their school e-mail addresses. While registering students for exams through the InfoStud system; from the E-Learning system, the executives archived the documents, weekly materials, announcements and

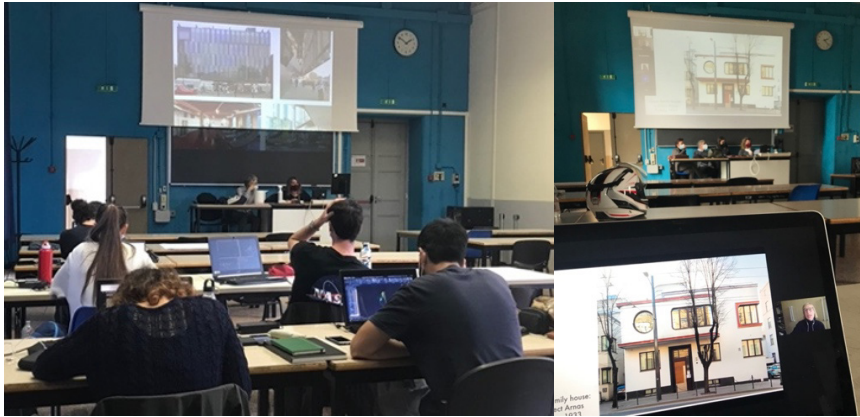


Fig.05 Lesson process in the classroom in mixed method (Zeynep Gulel archive, 2021)

course videos of the course and shared them with the students and the institution.

It was observed that the students participating in the physical studio environment were approximately the same people. As a result of the pre-meeting with these participants, the some reasons why they prefer the physical studio environment;

- There is no suitable and comfortable area in their living spaces for focus on the course,
- Remote access will completely lock them home, as it has lessons every day of the week,
- The classroom have the power to socialize,
- In distance education, the process is boring without establishing eye contact and body language communication with the lecturers,
- They shared with their group friends about the project more effectively in the classroom,
- They cannot understand what the executives actually thought about the work they did without seeing their gestures.

- It is difficult to understand and remember the executive's feedbacks without marking on the design by online system.

- Being in front of the screen constantly could be dangerous for eye health.

- They could not see who and how many people actually witnessed the process of their revision on the virtual platform, this obscurity made them uneasy.

Some of the foreign students participated in the lessons without having to come from their country. It was observed that these students overcame the difficulty of expression caused by their language inadequacies by reading the texts they had prepared, in front of the screen. Some students also stated that they were happy to save money on physical materials, travel and accommodation costs with remote access.

Some stated that they got lost among so many digital platforms (e-mail, Google Drive, e-Learning,

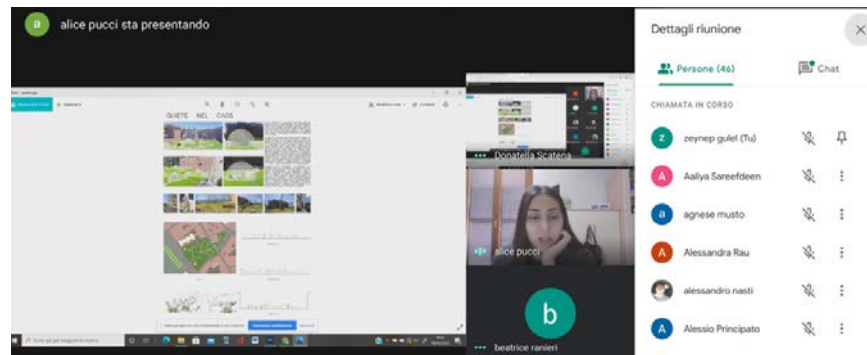


Fig.06 Interface of digital software (Zeynep Gulel archive, 2021)

infoStud, Zoom, Teams etc.) that mediated the course.

Conclusions

Despite the great problem of the pandemic, the teaching activity continued and allowed us to never interrupt the architectural interview. The bond between teachers and students also continued thanks to the experience of the international webinar which brought contemporary themes and even the debate that arose in the last Venice architecture biennale to the virtual classroom. The teaching has obviously been revisited, perhaps a little altered but it has never stopped.

From the teaching point of view, the lockdown did not exist and did not interrupt our conversation.



Fig.07 Traditional critical method in mixed method (Zeynep Gulel archive, 2021)

Esther Giani
Rarefied atmospheres

Iuav University of Venice, Italy



Fig.01 Cover of the on-line workshop curated by Esther Giani + Pretesti. An experience of blended teaching by distance shared working

We have been using remote connections for many years, for decades; already in the past millennium it was largely in use by several industrial holding companies, in politics, in journalism, in entertainment. But only in the last two years, due to the Covid-19 pandemic, the call system has undergone an unexpected development: modified and enriched platforms, simplifications in connections, expansion of accessibility. A sort of interaction pseudo-democratization. Today and in few months, video-calling has become a widespread custom regardless of social media; it's strongly inter-generational and available even from faraway places.

What are the consequences of this new pervasive competence and what the rebounds on the practice of knowledge transmission? The emerging scenarios are different and depend on many variations. The aim of this short contribution is to trace a framework, a field of possibilities, using a simple and proven analytical analysis: the SWOT.

Strengths

Spokespersons scattered around the world may participate remotely and simultaneously at the same event: this is the most obvious strength. Again, this is not a novelty but rather a rediscovery. The lockdown made it necessary: a form of remote dialogue used only on formal and exceptional occasions became more simple, reliable, and familiar. These opportunities are at disposal almost for free. Before, a roundtable with several international researchers would have required quite a complex organization (search for funds and quotes, administrative procedures, several costs' approval, permits and calendars, etc.). Now, any event can almost be improvised amongst interest parties, nearly without

“structural” involvement.

A strength comes from government investments. These are direct by means of incentives and dedicated funding devoted to e-infrastructure and hardware (in both the public and the private sector). They are also indirect, as a result of an unprecedented boost given by a demand that is outlining a new market. Another element of strength is the development/improvement of integrated digital platforms. Hardware and software infrastructures guarantee technological services and tools, programs and applications, for distribution, management and creation of digital content and services, also by the integration of multiple media. In a few months, companies reconfigured platforms systems for a more friendly virtual, blended, flexible learning. Training systems in e-learning, work environment and organization, research ambient, monitoring, have been tuned up. Storage of experiences and services have been redirected. All has been organized upon multiple access levels and on user's type based. Thus, the possibility of disseminating contents became boundless. The reference is to the “enrichable” classic recorded lesson. Modes not at all innovative, but now much simplified and of direct and easy access.

Strength: Space-time displacement. Students can follow the lessons without being bound either to the place nor to the time segment in which they take place. Strictly speaking, this is a strength, but it's also a weakness.

Still on the transmission of knowledge: a strength is the archiveability. Material and immaterial contents of different origins can be stored and be of direct and diachronic access. Seminars, workshops, roundtables, conferences, lessons but also exercises and reviews can feed and design invaluable

PROJECT DESCRIPTION

PREtesti proposed a sort of team game for an *excursion on capacities* (MVRDV 2005) through the interactive composition of a 1x1x1KM cube for an autonomous community of 15.000 inhabitants.

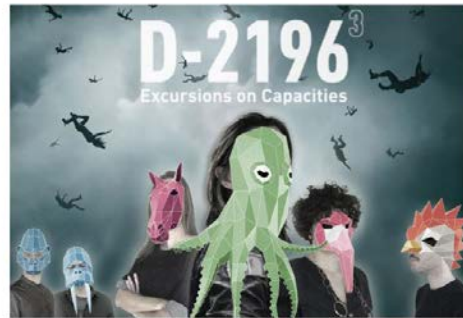
In three weeks we ventured into *Operative Epistemology exercises* (Munari 1981): the students challenged each other in strategies of active exploration of the knowledge-building processes to become more aware of their cognitive processes.

The natural consequence was a general reflection on the elaboration's methods and use of knowledge and culture for a renewed social awareness.

The pretext of the pandemic and the latest isolation we've been forced to, led us to imagine an island (D-2196: the denied have address) where 6.000 residents and 9.000 users were trapped.

Five spontaneous teams worked out to make the new community survive starting from the basic needs: providing clean air and food (level: landscape), to move on to infrastructure strategies to feed the island (level: netcape), ending up with the definition of the builtcape as synthesis of the achieved awareness of coexistence between man and nature (level: builtcape).

It was a role-playing game, cooperative and multiplayer. The game is a privileged place for meeting, training and collaboration, where to do mental gym and to build knowledge, sharing the processes, the aim, the goals.



WORKSHOP PRESENTATION

01/10

ESTHER GIANI + PRETESTI



Fig.02 Presentation of the on-line workshop curated by Esther Giani + Pretesti

(personal) archives.

Weaknesses

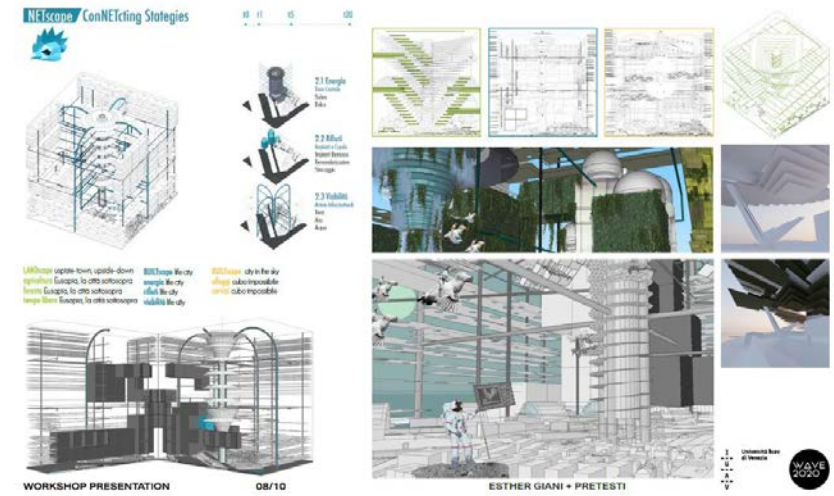
The “aura” absence. Who works in the teaching world, and generally deals with communication, knows the importance of the empathic perception of the speaker during the communication. What atmosphere a speech can generate; the listeners’ gaze; the body language; buzz or silence in the hall... they are all important ingredients for the success or failure of any lesson, conference, seminar. With online modes, the atmosphere becomes dry, rarefied. The impact of occasional interlocutions, interruptions, unexpected questions, in both directions, are also lost. The reference is to those small “incidents” that indirectly help in *fixing* the sense of lessons. Those that *mark* the transmission of knowledge while is taking place.

Applicative disciplines suffered most of the physicality loss during online communications. It is even more noticeable in our case, where a *manufacture* of the educational production is involved. It concerns the whole block of knowledge related to the Architecture Project. «The teacher’s pencil should not be more than a meter from the student’s eye», was a *boutade* that Ignazio Gardella loved to repeat, in times far from the digital advent. Digital. it could be argued that the new applications

make possible interactive reasoning on drawing, even at a distance. Therefore, and to some extent, the former dialogues on sketches drawn on the sheet are compensated thanks to sophisticated digital and interactive applications (e-pencils, MS-Notes Etc). We know that this is not: the rustle of the pencil on the paper, the suspended or accelerated breathing, the pressure of the hand, the imperious or hesitant stroke, are lost in the project-review carried out at a distance. It is the case to add that architecture students have been losing this “artisan dimension” since a decade, since the digital design appeared at the early stage of training.

Our students are all formidable self-taught in mastering powerful and seductive digital representational tools. The same students who too often forget the hand-drawing, a skill that seldom is taught.

Space-time displacement: a strength but also a weakness. The opportunity to delay the access to available and archived data, can produce an effect of “indolence” or apathy (absence of pathos). The remote and blended didactic fails to affect and to be impressed on subjects who have no or little interest, nor mature or nascent. The curiosity given by a brilliant dialectic and by a captivating communication rarely exceeds the time of consumption. Especially in those students who still



WORKSHOP PRESENTATION

08/10

ESTHER GIANI + PRETESTI

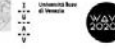


Fig.03 Presentation of the on-line workshop curated by Esther Giani + Pretesti

do not know if they are in the right course of study. At last: in a blended flexible training, students do not have “more time” to study and process the communications received throughout the day and the week. This is a myth to be dispelled. In many cases the opposite is true: times expand more, attention is lost faster, concentration follows armillary paths that have no sense to share. The impromptu opportunity delivered remotely is like an “active ingredient” capable of fortifying: it acts as a therapeutic effect on traditional (in presence) teaching. On the other hand, the persistency of remote teaching tires all participants out, weakening the growth (and immune) system. We all find ourselves in a rarefied realm.

Opportunities

The gradual familiarization with remote communication, with blended flexible training activities through the various platforms at disposal, suggest possible functional evolutions, both to students and professors.

Teachers learnt by doing the possibility of storing and sharing teaching materials that can be used by students at any times. At a later stage we can imagine (and design) an archive that, although “cold”, can be used several times by several users without time limits. We, as teachers, should though

be aware: posting a lesson call for a different care in choosing images and in structuring the vocal or written contribution. In this pedagogical mode *verba non volant*.

Overcoming the time and place unit: the opportunity concerns recording lessons, seminars, conferences but above all project’s reviews. This condition of dialectical iteration allows a personalization of training. This is feasible independently and autonomously by each student, according to each own individual learning rhythms. Rhythms which, as we know, are changeable, even within the same day. As stated above, such an opportunity supposes an aware and interested student.

The community formed during an-online or blended educational cycles, has innovative interaction opportunities than in the immediate past. This new generation of students can sharpen horizontal forms of learning, by using many levels of interconnection. What is lost in spontaneity and immediacy should be partly compensated by the greater ease that remote communication entails. Again, these opportunities depend on the student and on the micro-communities of students and of students-teachers gathered within the design studios. It’s reported behaviours ranging from isolation, despite smaller working groups organized by the teacher, to degeneration due to the loss of inhibition. Inhibition

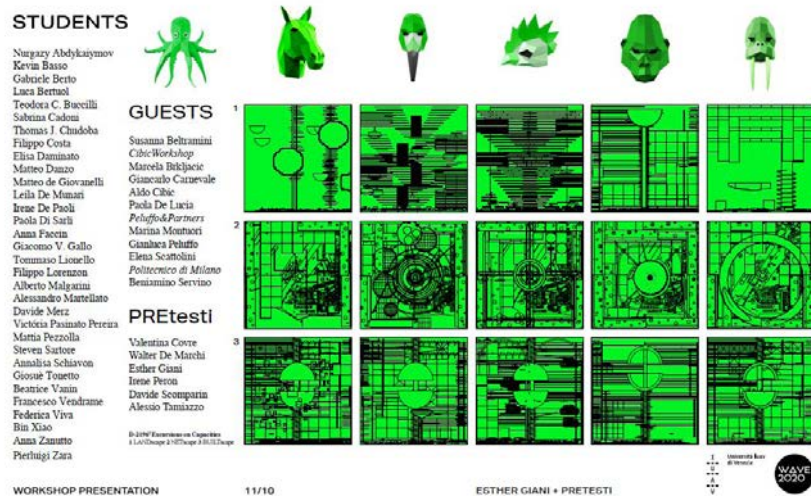


Fig.04 Participants and directions of the on-line workshop

that live-communication always brings with.

Threats

Risks are obvious, and partially anticipated. The loss of contact penalizes those aspects intertwined with learning by doing, with the poesis. Aspect which are decisive for training activities in architecture. Online and blended teaching also disadvantages those forms of self-teaching driven by emulation, and depowers the spirit of competition produced in every didactic community. The reference is to those forms of learning considered “minor”, almost secondary effects; on the contrary and by the experience of each of us, they may take on a fundamental and, at times, revealing role. The greatest threat is to that atmosphere produced above all in design studios, intensive seminars, workshops. A living atmosphere, a composite condition made up of stimuli and impulses, even sensorial, that seems not to be replicable remotely. At its contrary, during the online and blended same activities, it dried, it turned into a rarefied atmosphere.

The project’s process cannot be outlined, no matter how much we try to rationalize it, to sequence it. Especially the initial stages of a project have a variable “density”. Confused phases are necessary and normal. Likewise, crossing successive

approximations is indispensable for selecting and sorting coherent, and logical choices. In the online and blended didactic, the impossibility of following (even of being produced) this “nascent phase” of projects is a risk, difficult to avoid.

To feel this moment of pandemic even more dangerous, there is a reinvigorated boost to digital reproduction of images, diagrams, and graphics. The world of representation, in just two decades, offered powerful tools to the Project, also involving its initial phases, not only its description. One cannot but be fascinated by these formidable instruments, still in dizzying evolution. Nevertheless, the prolonged confinement gives us the opportunity to wonder whether the seductive power exerted by digital representation does also change the “way of thinking” the project. The reference is to millennials and generation Z students. Describing the Project in a more engaging, realistic, and augmented way, even before intercepting and taming the generating morpheme, can represent a risk. It can produce a removal, a loss of skills. Skills and tasks that, rather, link us to our predecessors, relating the past to the future. This risk is reported as a secondary effect of remote teaching, a possible threat, a sure damage because perhaps irreversible. Our discipline, architecture design, has a solid,

static, non-evolutionary core, which is related to the Form. The latter uses knowledge associated to those like Technology, Construction and Representation which, on the contrary, evolve over time. The risk is the hierarchies alteration: tools so effective and attractive make lose sight the main target. This is a threat. The Project uses writing, but writing is not the Project.

Renzo Lecardane, Paola La Scala, Bianca Andoloro
International distance learning design experiences.*
Above the clouds, a project for a temporary event in the
Bolognetta valley

University of Palermo, Italy

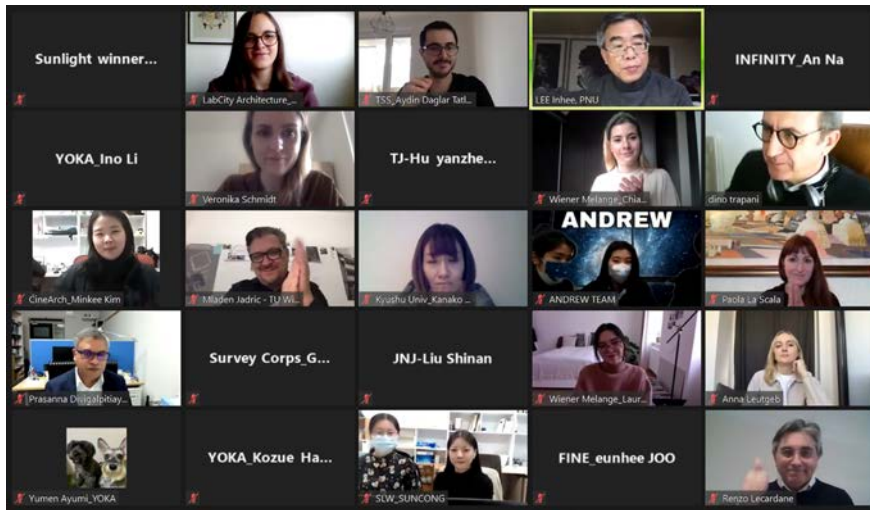


Fig.01 Teams presentation on Zoom platform

Introduction

The health emergency due to the spread of COVID-19 has required a methodological and technological adaptation to the entire world of teaching and researching, in order to define in a brief time new methods for designing and teaching. In consideration of this, Campus Asia¹ decided to organize one of the key events of its educational offer in a distance learning form, an international winter school with over eighty participants and five international guest universities. Together with Kyushu University (China), Tongji University (Japan) and Pusan National University (South Korea), the edition held between 15 and 26 February 2021 saw the participation of two European partner universities, the Università degli Studi di Palermo² and the Vienna University of Technology (Austria) (Fig. 01).

The Department of Architecture of the Università degli Studi di Palermo (DARCH) took part into the competition as the LabCity Architecture research group, directed by Prof. Renzo Lecardane, previously partner of numerous exchange programmes with Pusan University and Prof. I. Lee. Among them, several editions of the BIADW (Busan International Architecture Design Workshop) (Lecardane et al., 2018) and the international workshop “Balcony and Violin. Life of Post-Covid19”, held remotely in August 2020³. The 2021 edition of the winter school chose to emphasize the recognition of heterogeneity over homogeneity, focusing on the balance between man, nature and architecture. With this aim in mind, the LabCity Architecture group has identified the natural site of the waterfalls and cave of San Nicola in the Bolognetta valley, in line with the common research interests about the development

and regeneration of rural small towns. Furthermore, the winter school suggested a thematic reflection on the places of cinema, underlining the impact of the evocative power of the representative arts on communities and places. On the occasion of the thirtieth anniversary of the Academy Award for the best foreign film “Nuovo Cinema Paradiso”, by the director Maestro Giuseppe Tornatore, the theme “Cinema Paradiso” was identified as an opportunity for reflecting on possible designs in naturalistic territories. The aim of the workshop was the design of a resting place, which would allow a small group of fifteen visitors to stop, eat and enjoy the vision of a film festival inside the site of the waterfalls and the cave of San Nicola.

Cinema Paradiso: an international experience of distance learning Laboratory

Campus Asia “Cinema Paradiso” hosted over eighty international students, divided into fourteen working groups, for whom a dense programme of activities and deadlines has been scheduled. This programme also included several thematic lectures led by the professors of the involved universities, necessary for the definition of a cultural background and the project proposals. To this end, the Campus Asia website was implemented through the creation of a specific platform, which would allow access to the seminar activities organized. A rich and dense program of thematic seminars supported the design work that took place through three progressive moments of thematic deadlines. At the end of the workshop, the evaluation phase took place, involving the scientific committee for the choice of the award for the best projects. Among the lectures, the seminar curated by Professor R. Lecardane and Arch. PhD P. La Scala entitled “The territory of

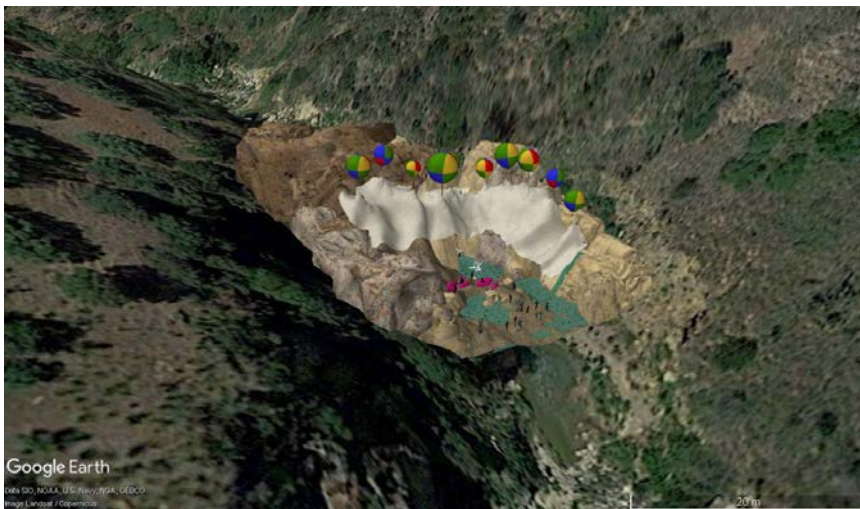


Fig.02 Cave and waterfall of San Nicola in the Bolognetta valley
Fig.03 Above the clouds/ Sopra le nuvole (3D model in the Google Earth map) © LabCity Architecture, 2021

the Bolognetta Valley: waterfall and cave of San Nicola” (Fig. 02) introduced the project site of the waterfalls and the cave of San Nicola, in the frame of a broader research that involves the potential of the rural small towns as well as the pedestrian and cultural path of the Sicilian Transversal. The site was shown through videos available online, shot with drones, photographs and a three-dimensional model exported by the Google Earth software and made available to students. The working groups, made up of three students and led by Tutors, Coordinators and Professors, worked remotely from different parts of the world on digital

platforms such as Zoom, Microsoft Teams or Google Meet, especially using the specific sharing and interaction tools. During the course of the week, summary dossiers were requested to show the progress of the project, from the representation of the concept to its final version. Furthermore, in order to strengthen the relationship between man and the natural environment, all the groups developed a three-dimensional geo-localized model, visualized on the Google Earth platform. (Fig. 03)



Fig.04 Above the clouds/ Sopra le nuvole (libretto's cover) © LabCity Architecture, 2021

Above the clouds: a project-event in the Bolognetta Valley

The project designed by LabCity Architecture group, awarded first place ex aequo by the scientific, wants to develop the hypothesis of a possible relationship between natural and technological elements of the project through the device of performance. This, with the scope of defining a meta-theatrical scenario dedicated to the Sicilian cinema, within the natural ecosystem of the Milicia river. Thus, this occasion allows the project-event to begin a renewed enhancement and use of some paths, unknown to many, and to enhance the potentialities of the place within the natural territory of Bolognetta. Therefore, on a hand, the San Nicola Falls build a natural scenario for the narrative of the event, in order to celebrate the Sicilian sites of cinema; on the other, the project stages the meta-theatrical imaginary setting in the shape of an opera libretto, highlighting the aim to combine the presence of man in the natural environment through a dreamlike and fantastic journey (Lecardane et alii, 2021) (Fig. 04).

In this way, the project seizes the Sicilian ancient theatrical tradition, by involving the spectator in depth, so that he becomes an actor himself. For the same purpose, the myth of the Greek goddess Demeter, protector of fertility, symbolically guides

the spectators towards a dream-like dimension, sealing the deal between man and nature. The project-event is planned for an audience of fifteen participants who can reach the site on foot from a parking lot not far from the town of Bolognetta, on the day of the full moon, during the week of the summer solstice, 24th June 2021. The journey begins along the bed of the Milicia river and constitutes the first experience of the narrative imaginary setting.

Once at the cavea, ending point of the path and heart of the project site, the event stages two performances which highlight the multi-temporal feature of the representation. The first one takes place during the day and includes a juggling show inspired by the famous film “Clown” by the director Maestro Federico Fellini (Fellini, 2008). The second one, instead, takes place after sunset and until late evening: it evokes the atmosphere of the Greek theatre through the projection of a selection of films. During the day, the circus arts and the juggling show claim the spectator's attention, suggesting to become an active part of the performance himself (Fig. 05). In the late afternoon, the film projection takes place on a light canopy, suspended by inflatables anchored to the ground with cables. In front of the waterfall, in the natural cavea, soft ropes and inflatable cushions allow the



Fig.05 Above the clouds/ Sopra le nuvole (Fellinian juggling) © LabCity Architecture, 2021
Fig.06 Above the clouds/ Sopra le nuvole (Cinema Paradise) © LabCity Architecture, 2021

public to comfortably attend the shows (Fig. 06). Aim of the project-event is the construction of a temporary artificial surface on which to project, as on a screen, some scenes of Maestro Tornatore's films. On late night, the experience comes to an end by leading the spectators in the opposite direction, in a nightlike atmosphere enlightened by small artificial lights.

In line with the relative imaginary setting inspired to the well-known temporary plug-ins of Archigrams (Sadler et al., 2005), the project in the San Nicola Waterfall seeks to define an ephemeral natural piece in order to build a dream-like scenario and emphasize the expressive power of cinema. On a hand, the theme of the journey and, on the other, that of the memory of an unrepeatable event, aim to strengthen the sense of community and the relationship of man and nature (Munari, 1998). This type of approach reveals a declared scope of prefiguring a temporary attitude towards the rural small towns, through renewed processes of human and cultural regeneration.

The project, designed entirely remotely through progressive phases, provided an important opportunity for several reflections on the teaching methods within the laboratory, confirming the importance of common researches about contemporary themes. The interaction and sharing tools on the platforms have also made it possible to carry out a collective work capable of highlighting the peculiarities of the individual members of the group. In conclusion, the project, presented at the final critical session, has been awarded with the first place ex aequo and will be part of a collective publication together with several contributions

from the workshop.

* This paper is the result of a collaboration which that inspired several common reflections. Only for the scope of scientific evaluation, the paragraph "Introduction" is to be attributed to Paola La Scala; the paragraph "Cinema Paradise: an international experience of distance learning Laboratory" is to be attributed to Bianca Andaloro; the paragraph "Above the clouds: a project-event in the Bolognetta Valley" is to be attributed to Renzo Lecardane.

Notes

¹ Campus Asia has been instituted by three Asian universities, Kyushu University (China), Tongji University (Japan) and Pusan National University (South Korea) for the development of an international educational program in the architectural and environmental design. With the scope of designing and researching sustainable urban and architectural design, numerous activities focus on the implementation of resilient design, on the theme of accessibility and inclusive urban design have been organized in the recent years.

² The Università degli Studi di Palermo and the Department of Architecture (DARCH) took part into the competition as the LabCity Architecture research group. LabCity Architecture is led Prof. Renzo Lecardane (UNIPA), Prof. Ferdinando Trapani (UNIPA), Prof. Zeila Tesoriere (UNIPA), Prof. Ivan Scinardo (Director of the Centro Sperimentale di Cinematografia - National Film School), Giuseppe De Caro (Director of the Association Antica Trasversale Sicula), tutors Dr. Paola La Scala Lecturer (UNIPA) e PhD student Bianca Andaloro and students Valentina D'Anna, Egizia Miraudo, Federica Tognetti.

³ LabCity Architecture group took part into the International Workshop internazionale with the project "Centri minori in Sicilia. Valledolmo 2030: la città che cura", designed by the students of the Master Thesis Lab (DARCH-UniPA). The project has been awarded among eighteen international designs as "Excellence Award" by the Chairman of BAF (Busan Architecture Festival).

Bibliography and references

- Alnusairat, S., Al Maani, D., & Al-Jokhadar, A. (2021). *Architecture students' satisfaction with and perceptions of online design studios during COVID-19 lockdown: the case of Jordan universities*. Archnet-IJAR. <https://doi.org/10.1108/ARCH-09-2020-0195>
- Asadpour, A. (2021). *Student challenges in online architectural design courses in Iran during the COVID-19 pandemic. E-Learning and Digital Media*. <https://doi.org/10.1177/20427530211022923>
- Bacelar-Nicolau, P., Caeiro, S., Martinho, A. P., Azeiteiro, U. M., & Amador, F. (2009). *E-learning for the environment: The Universidade Aberta (Portuguese Open Distance University) experience in the environmental sciences post-graduate courses. International Journal of Sustainability in Higher Education*. <https://doi.org/10.1108/14676370910990701>
- Ceylan, S., Şahin, P., Seçmen, S., Somer, M. E., & Süher, K. H. (2021). *An evaluation of online architectural design studios during COVID-19 outbreak*. Archnet-IJAR. <https://doi.org/10.1108/ARCH-10-2020-0230>
- Milovanović, A., Kostić, M., Zorić, A., Dordević, A., Pešić, M., Bugarski, J., Josifovski, A. (2020). *Transferring COVID-19 challenges into learning potentials: Online workshops in architectural education*. Sustainability (Switzerland). <https://doi.org/10.3390/su12177024>
- Sakai Learning Management System. (n.d.). Retrieved July 15, 2021, from <https://www.sakailms.org/>
- Silva, N. F., & Lima, E. M. (2008). *Distance learning in architectural design studio: Two comparative studies with one onsite teaching. Innovative Techniques in Instruction Technology, E-Learning, E-Assessment, and Education*. https://doi.org/10.1007/978-1-4020-8739-4_66
- Talib, C. A., Aliyu, H., Malik, A. M. A., Siang, K. H., Novopashenny, I., & Ali, M. (2019). *Sakai: mobile learning platform*. International Journal of Interactive Mobile Technologies. <https://doi.org/10.3991/ijim.v13i11.10800>
- Varma, A., & Jafri, M. S. (2021). *COVID-19 responsive teaching of undergraduate architecture programs in India: learnings for post-pandemic education*. Archnet-IJAR. <https://doi.org/10.1108/ARCH-10-2020-0234>

Maria Panta, Joseph Agyei Danquah
Changing the Curriculum in Architectural Education: The Case of the Trans-African Dialogues Series.

German University in Cairo, Egypt
 CSIR-Building and Road Research Institute, Ghana

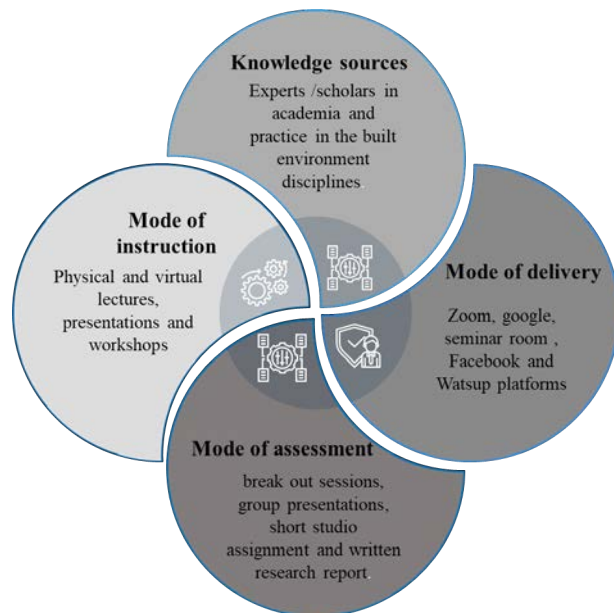
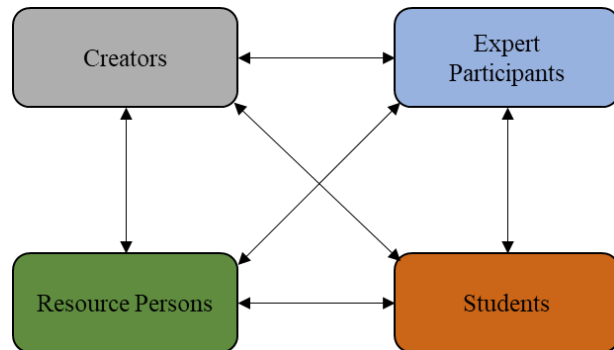


Fig.01 An Illustration of the Collaborative and Engagement network amongst Classified Participants (Authors, 2021)
Fig.02 The transdisciplinary blended learning system adopted for the module (Authors, 2021)

Introduction

The paper describes the authors' direct experience with an elective module entitled, *Trans-African Dialogues: Drawing on existing knowledge, strengths, skills, resources & innovation*. It offers a framework on how this module was initiated, developed and delivered in the faculty of Architecture and Urban Design at the German University in Cairo (GUC) during the Spring semester 2021. The module, intended specifically for the 10th semester architecture students with a view to inform their design studio thinking, builds upon the findings of the author's doctoral research project and primary fieldwork in Ghana (Panta, 2018); it investigates themes such as architectural education, its curriculum, and the need to rethink the discipline and its practice from a broader environmental and cultural perspective.

The value and relevance of architectural education is becoming increasingly scrutinized in light of pressing socio-economic conditions, which demand ways of engagement and transformation in the way it is perceived and practiced (Bashier, 2014; Harris & Widder, 2014). This makes the role of the design studio, and architectural education overall, fundamental and consequently calls attention to the curriculum. In addition, Information and communication technology (ICT) has over the past couple of years become the pivot on which emerging academic teaching and learning revolve. This has become more pronounced with the global COVID 19 pandemic, which has seen many higher institutions adopt blended systems of teaching and learning for their students. The blended system is argued to have many advantages over the traditional physical teaching which include improved pedagogies, holistic knowledge acquisition, financial prudence,

social interactions as well as personal agency (Berlanda, 2017; Ibrahim & Utaberta, 2012; Shaqour, 2021; Steinø & Khalid, 2017).

In Africa the current tertiary education is defined by transformation in a way that it includes histories, experiences, narratives and perspectives that the colonial projects have suppressed, and emphasize the imperative to redefine African modernity (Lokko L., 2016). Therefore, the question that surfaces is what does a curriculum of an African institution need to entail in order to serve the needs of its students, and context in which it belongs?

Further, the rules governing how one becomes skilled and work-ready are changing globally and architectural education must change with it or risk irrelevance and ultimately, dissolution (Harris & Widder, 2014). Educators, including (Parvin and Moore 2020; Osae-Addo 2017; Lokko, Bartlett School of Architecture 2016; Lari, Al Jazeera 2016; Amaral et al. 2013; Design Indaba 2012; Till 2008, and Freire 1996), contend that education is all about giving the students the opportunity and freedom, the critical skills and tools to engage with the field as a dynamic social system and thus be able to transform it; it is not enough to train students by giving them expertise in already defined fields.

Module description

This elective module rethinks the discipline of Architecture from the perspective of other disciplines and most importantly from culture; it acknowledges the need to go beyond disciplinary boundaries and engage in inductive processes in order to find new and more relevant analytical concepts and categories so that we understand the field (Africa) in a more comprehensive way (Paul Jenkins 2013). Transdisciplinarity enables the



Fig.03 A screen shoot of some of the posters advertising the weekly lectures (Authors, 2021)

Fig.04 A screen shoot of zoom platform being used for the presentation and dialogue during one of the session (Authors, 2021)

necessary dialogue which the complexity relating to development and design in the African continent demands. It is interested in examining how collaborative teaching and learning may address the existing levels of indigenous knowledge and local skills in order to cope with the complexities and challenges of our era, with a view to specifically inform the design studio thinking and practice.

The module draws attention to the importance of “exploration” in relation to architectural practice and training in the continent, and enables the sharing of inclusive trans-African experiences and knowledge -relating to culture, education, practice and research. Broadly, it seeks to merge architectural design, theory & practice, sustainable development, community development and

participation and critical approaches to innovation in order to observe, explore, imagine, rethink and articulate Africanities. In light of the above the students learn explore the potential of urban and rural areas for adaptation and resilience through human-centred approaches to design, social transformation, inclusion and integration.

Methodology

The module uses a qualitative methodology based on a mixture of creative methods, such as the praxis of transdisciplinary collaboration in the form of dialogue (Danermark, 2019; Denney et al., 2018; Simon et al., 2018), from the initial stage of writing the proposal for the module and throughout the delivery of the module.

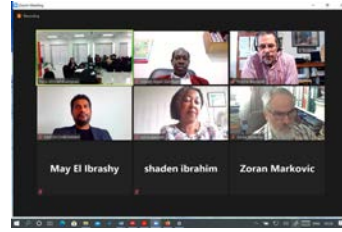


Fig.05 PICTURES TAKEN at the weekly module dialogue sessions (Authors, 2021)

1. Module facilitator engaging students and expert participants; 2. Student participant/speaker at a workshop session; 3. A section of students listening in during a virtual presentation by an expert speaker; 4. Students and other expert participants physically present at a workshop session; 5. Creators, students and expert participants engaged in dialogue after a presentation

The methodology entails collaboration on different levels: 1. between the course creator (authors of this paper and facilitators of the module), with the various case studies (by case studies the paper refers to the invited lectures by scholars, educators, practitioners, and experts in architectural education and practice, urban planning, community development, etc., whose work engages with the continent’s strengths and complex problems); 2. Collaboration between the various disciplines that the case studies are affiliated to; and 3. Most importantly the collaboration between the students with both the module creators/conveners and the invited case studies as illustrated in Figure 01.

The transdisciplinary dialogue is an effective tool to: re-think architectural theory and practice in a given context; address specificities of context and culture; and, question the often-rigid organizational structures of Architecture in a meaningful way enabling it to become more socially driven. The syncretism of all the above enables the module to: critique local situations and ask the right questions about the teaching and practice of architecture, question the boundaries of the discipline and its practice in the field, and reconsider the design process in the rapidly changing world. Further, the module makes use of virtual media for its implementation and delivery, specifically

social media mainly Facebook, virtual platforms like WhatsApp, cloud spaces like Google Drive for sharing work, and most importantly Zoom for broadcasting the lectures as well as enabling the semi-structured and unstructured dialogues to take place among the various case studies delivered, the students and conveners alike as seen in Figure 02. Thus the learning space encompasses both a geographical and a virtual site through and because of the use of technology; it moves from a conventional single-site location, which characterizes a physical classroom, to multiple sites of observation and participation that cross-cut dichotomies such as the ‘local’ and the ‘global’ (Jähne, Klar, and Jehle 2007).

Moreover, the combination of both sites, the physical and the virtual, contribute towards a more holistic exploration and understanding of the challenges that are related to the complexities in this context.

Using the weekly DIALOGUE delivery as case study

The use of the case study methodology is adopted to enable the understanding of complex issues the module addresses. Ten (10) case studies were selected from a pool of expertise on the African continent or whose work resonated with the African continent. These cases from nine different locations

on the continent, embody real-life situations, issues, and problems, enhance the rigor, genuineness, and gravity of the study and strengthen the cohesion and accuracy of the teachings, because ‘evidence from multiple cases is often considered more compelling (Phelan 2011; Yin 2009). This creates a comparative context through which similarities and differences are drawn in order to first understand the local social context in which these building practices are considered; Second, it ensures realistic and grounded recommendations. The case studies provide a dialogue that enables the exploration of architectural practice from a climate and culture first approach, which addresses and engages with the specificities of the context, and demonstrates diverse ways of building community resilience while reflecting on the need to integrate social, physical and cultural change.

All 10 case studies deal with similar core issues and challenges in the field and cover a wide range of approaches to making the built environment, which they explore empirically from a variety of geographic regions, different perspectives and steeped in diverse circumstances. This reinforces the idea that an Africa-to-Africa dialogue may benefit the continent. Fourteen (14) students selected the module as their elective course (15 is the maximum number per elective course). This novel module received much support from the institution including technical support and a seminar hall for the physical classroom engagements and publicity. Posters were designed for each weekly dialogue, and published (see figure 03) both on campus and social media platforms of students and staff. Students were also given reference material to read every week to gain background knowledge prior to the weekly dialogues.

Each session lasted for two hours: (a) one for the case study and Q&A from students, and (b) one hour for the dialogue amongst all participants with themes drawn from the case study. The majority of the invited case studies were broadcasted virtually on Zoom (figure 04 and 05), whilst remaining were delivered physically at the GUC campus, with expert participants and others joining on zoom for the dialogue afterwards. The invited case studies were given the freedom to develop their own presentation style and topic after having read the brief of the module, and focused on themes such as sustainable development, building materials, barrier free and inclusion, housing, cultural heritage, social cohesion, diversity and gender, earth construction, potentials and challenges of urban and rural linkages

on the African continent. Only one case study took the form of a day’s workshop, which focused on inclusive accessible design and invited academics, experts, the civil society and students alike.

The lecture notes and presentations together with references for further reading were uploaded on Google drive created for this module and shared to students and expert participants. Tasks and assignments were also accessed and delivered by students, instructors and experts on this platform. The use of the google drive was very instrumental in sharing, collection, distribution of information and instructions in various forms and a good virtual library for all participants (see Figure 06).

Analysis and findings

The novelty and authenticity of the trans-African dialogues module lies in transforming the curriculum through transdisciplinarity, blended systems of teaching and learning, and dialogue as a tool to explore and co-create knowledge. The module effectively achieved most of the set objectives including the broadening of knowledge frontiers of students through the engagement with the invited case studies. It is a new way of engaging experts in the field at GUC, with physical distance and funding as a non-issue. The table 01 shows the key challenges encountered and the solutions offered.

Challenges encountered from the module	Solutions offered
Students physical attendance to lectures	Attendance was made compulsory as part of assessing the students. Again regular reminders were done through Facebook and Watsapp platforms, and printed posters on campus boards
The traditional mind set of the students	The occasional unfamiliarity with the way of teaching was overcome with very diverse forms of lecture delivery. This included PowerPoint presentations, video and audio presentations.
Difficulty of students engaging with expert participants	Students found it challenging to engage with presenters and expert panel as this was a ‘break from tradition’ where students only listen and digest what teachers instruct. Direct interaction from instructors broke this conservancy.
Too much too soon syndrome	Expert presenters were later given the free hand in finding innovative ways of making their lecture very simple and interesting to engage with participants. Presentations and further reads were shared with participants through google drive
Developing an effective system of assessment	Weekly attendance, students participating levels during dialogues and break-out sessions were used throughout the dialogue. a final research report was received from each student detailing how these have reflected in their studio work
Prepping the students for each dialogue series	Advance references and information including teasers were sent to students a 3 days before each lecture. This engendered interest for each lecture

Table 01 Key challenges encountered and the solutions offered.

Mode of assessment

The students were assessed through 3 different modes: first, their participation and engagement with the dialogues ensuing each lecture; second, the mid-term submission which was a design proposal on barrier-free solutions for the GUC campus; and third, the final submission of a written report at the end of the semester. The latter was in collaboration with their respective design studios projects and focused on the context analysis of their individual design proposals drawing on all the main themes of the trans-African dialogue series but applying them to their own projects contexts. Thirteen major themes were drawn and their level of application is seen in the figure 07.

All participants, both virtual and physical consider the module as very informative and effective in its delivery. Students were appreciative of the richness of information and exposition to critical discourse on the continent and expert presenters, and praised the transdisciplinarity of the module as the one of the best methods to influence architectural studio.

Discussion and Conclusion

As education shifts are reflecting a need to address both the health (pandemic) and climate crisis, We as educators are called to also embrace the flexible and blended approaches to teaching (Mahmoud et al., 2010; Mheta et al., 2018; Salama, 2013; Senturer & Ozersay, 1998). The paper considers the Trans-African dialogues transdisciplinary module an effective tool for contributing to the transformation in the African architectural education and curriculum. It successfully endeavoured to embrace the latter at GUC, which is a ‘normative’ architecture school where modern architecture is taught.

One of the biggest challenges in Egypt, and in other regions in Africa, was the power cuts, which sometimes occurred, that interrupted the broadcast of the Zoom participants. This was overcome by the author being physically present in the classroom encouraging the continuation of the lectures and/or dialogue. One of the realisations that surfaced from both the students and authors perspectives is that the syncretism of physical teaching with the use of technology has the maximum effect. Specifically, the workshop on inclusive and accessible design

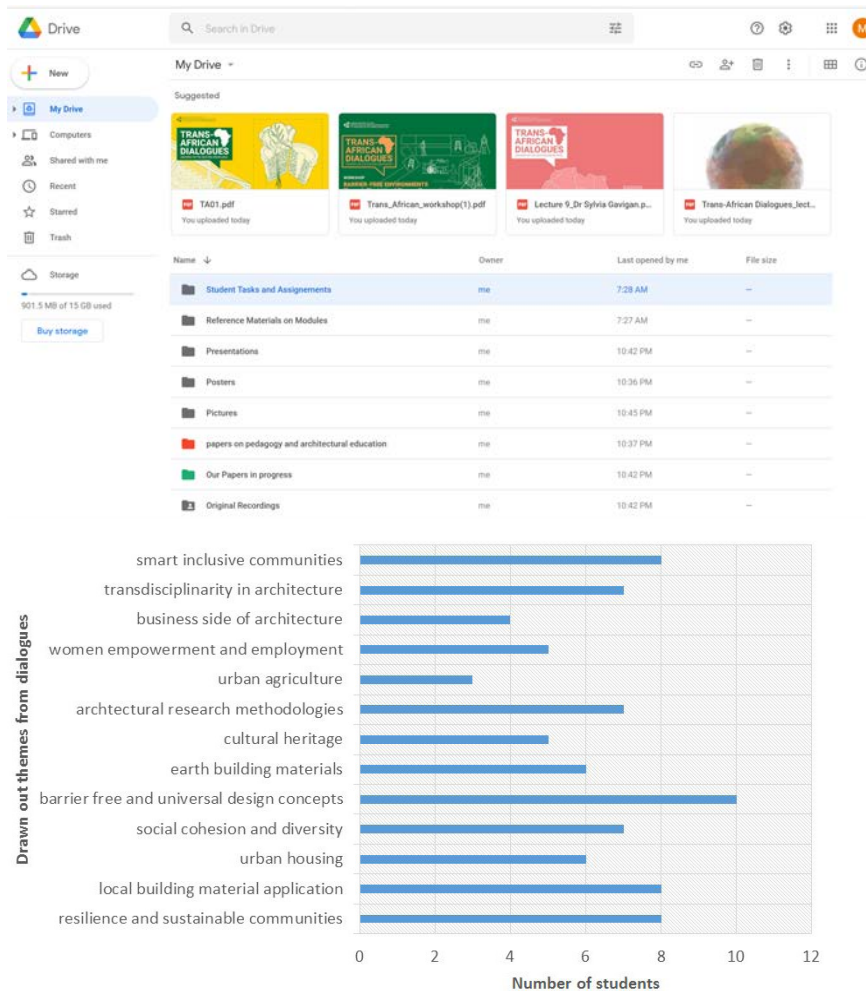


Fig.06 A screen shoot of Google drive used for further engagement with participants and students and a virtual library (Authors, 2021)

Fig.07 A chart showing the level of participating students' application of drawn out themes from the dialogue series as reflected in their studio project. (Authors, 2021)

mentioned earlier (Using the weekly DIALOGUE delivery as case study) made use of both, including demonstrations on in/accessibility by GUC students with impairments, as well as presentations on Zoom, and the 'binding' dialogue that had almost everyone from the live audience participate. There are certain qualities of online learning, which seem to present important advantages of blended learning to traditional learning, especially since the pandemic of covid-19. In light of the above, the paper contends

that the syncretism of teaching architecture in the flexible and blended approach and transdisciplinary teaching and learning methods enables solutions, which can contribute to giving the students the critical skills and tools to shape the field itself.

Bibliography and references

- Al Jazeera. (2016). Rebel Architecture - Pakistan: A Traditional Future [TV Documentary Series]. Available at: <http://www.aljazeera.com/programmes/rebelarchitecture/> [accessed 20 May 2016].
- Amaral, G., Bushee, J., Cordani, U. G., KAWASHITA, K., Reynolds, J. H., ALMEIDA, F. F. M. D. E., de Almeida, F. F. M., Hasui, Y., de Brito Neves, B. B., Fuck, R. A., Oldenzaal, Z., Guida, A., Tchalenko, J. S., Peacock, D. C. P., Sanderson, D. J., Rotevatn, A., Nixon, C. W., Rotevatn, A., Sanderson, D. J., ... Junho, M. do C. B. (2013). *Basics of social research*. In *Journal of Petrology*. <https://doi.org/10.1017/CBO9781107415324.004>
- Bartlett School of Architecture. 2016. Professor Lesley Lokko's keynote presentation on 'Risk' at aac2016 [Conference on 'Research-Based Education']. Available at: <https://vimeo.com/164282210> [accessed 10 May 2016].
- Bashier, F. (2014). *Reflections on architectural design education: The return of rationalism in the studio*. *Frontiers of Architectural Research*, 3(4), 424–430. <https://doi.org/10.1016/j.FOAR.2014.08.004>
- Berlanda, T. (2017). *De-colonising Architectural Education: Thoughts from Cape Town*. *Built Heritage*, 1(3), 69–72. <https://doi.org/10.1186/bf03545677>
- Danermark, B. (2019). *Applied interdisciplinary research: a critical realist perspective*. *Journal of Critical Realism*. <https://doi.org/10.1080/14767430.2019.1644983>
- Denney, J. M., Case, P. M., Metzger, A., Ivanova, M., & Asfaw, A. (2018). *Power in participatory processes: reflections from multi-stakeholder workshops in the Horn of Africa*. *Sustainability Science*, 13(3), 879–893. <https://doi.org/10.1007/s11625-018-0533-x>
- Design Indaba. 2012. Joe Osae-Addo at AZA2012 [Interview]. Available at: <https://vimeo.com/50303183> [accessed 2 April 2015].
- Harris, H., & Widder, L. (2014). *Architecture Live Projects: Pedagogy into Practice*. Routledge. [https://books.google.com.gh/books?hl=en&lr=&id=lt6hAwAAQBAJ&oi=fnd&pg=PP1&dq=architecture+education+-Rouche+S.+\(ed\):+2014&ots=YnyXS7xAP0&sig=g8CKOvsTWEB3JawWgWHzSV4Xh3w&redir_esc=y#v=onepage&q=architecture+education+-Rouche+S.+\(ed\)%3A2014&f=false](https://books.google.com.gh/books?hl=en&lr=&id=lt6hAwAAQBAJ&oi=fnd&pg=PP1&dq=architecture+education+-Rouche+S.+(ed):+2014&ots=YnyXS7xAP0&sig=g8CKOvsTWEB3JawWgWHzSV4Xh3w&redir_esc=y#v=onepage&q=architecture+education+-Rouche+S.+(ed)%3A2014&f=false)
- Ibrahim, N. L. N., & Utaberta, N. (2012). *Learning in Architecture Design Studio*. *Procedia - Social and Behavioral Sciences*, 60(October), 30–35. <https://doi.org/10.1016/j.sbspro.2012.09.342>
- Lokko, L., Ruedi Ray, K., & Marjanovic, I. (2020a). Academic Portfolio. In *The Portfolio*. <https://doi.org/10.4324/9780080514192-10>
- Lokko, L., Ruedi Ray, K., & Marjanovic, I. (2020b). Professional Portfolio. In *The Portfolio*. <https://doi.org/10.4324/9780080514192-11>
- Mahmoud, R., Jill, M., Saghafi, M. R., Franz, J., & Crowther, P. (2010). *Crossing the Cultural Divide : A Contemporary Holistic Framework for Conceptualising Design Studio Education*. *Proceedings of 2nd International Conference on Design Education: ConnectED*, July, 347–350. http://eprints.qut.edu.au/32147/1/c32147a.pdf?origin=publication_detail
- Mheta, G., Lungu, B. N., & Govender, T. (2018). *Decolonisation of the curriculum: A case study of the durban university of technology in South Africa*. *South African Journal of Education*, 38(4), 1–7. <https://doi.org/10.15700/saje.v38n4a1635>
- Osae-Addo, J. (2017). *Engaging with the Everyday*. In [APPLIED] FOREIGN AFFAIRS. <https://doi.org/10.1515/9783035608786-033>
- Panta, M. (2018). *Approaches to the resilience and the potential for adaptation through community-driven construction projects in the global South*. February.
- Parvin, A., & Moore, S. A. (2020). *Educational colonialism and progress: an enquiry into the architectural pedagogy of Bangladesh*. *Pedagogy, Culture and Society*, 28(1). <https://doi.org/10.1080/14681366.2019.1599996>
- Salama, A. (2013). Seeking responsive forms of pedagogy in architectural education. *Field*, 5(1).
- Senturer, A., & Ozersay, F. (1998). FORUM II - Architectural Education for the 3rd Millennium (A. M. Salama & N. Wilkinson (eds.); 1st ed.). Urban International Press.
- Shaqour, E. N. (2021). *Benefits, Disadvantages and Constrains of Applying Blended and Virtual Design* (Case Study - Studios at Nahda University). *MANSOURA ENGINEERING JOURNAL*, 46(1), 54–62.
- Simon, D., Palmer, H., Riise, J., Smit, W., & Valencia, S. (2018). *The challenges of transdisciplinary knowledge production: from unilocal to comparative research*. *Environment and Urbanization*, 30(2), 481–500. <https://doi.org/10.1177/0956247818787177>
- Steino, N., & Khalid, S. (2017). *The Hybrid Studio: Introducing Google+ as a Blended Learning Platform for Architectural Design Studio Teaching*, 5(1), 22–46. <https://doi.org/10.5278/ojs.jpblhe.v5i1.1562>
- Till, J. (2008). *What is architectural research?* *Building Research & Information*, 36(2), 195–199. <https://doi.org/10.1080/09613210701811015>

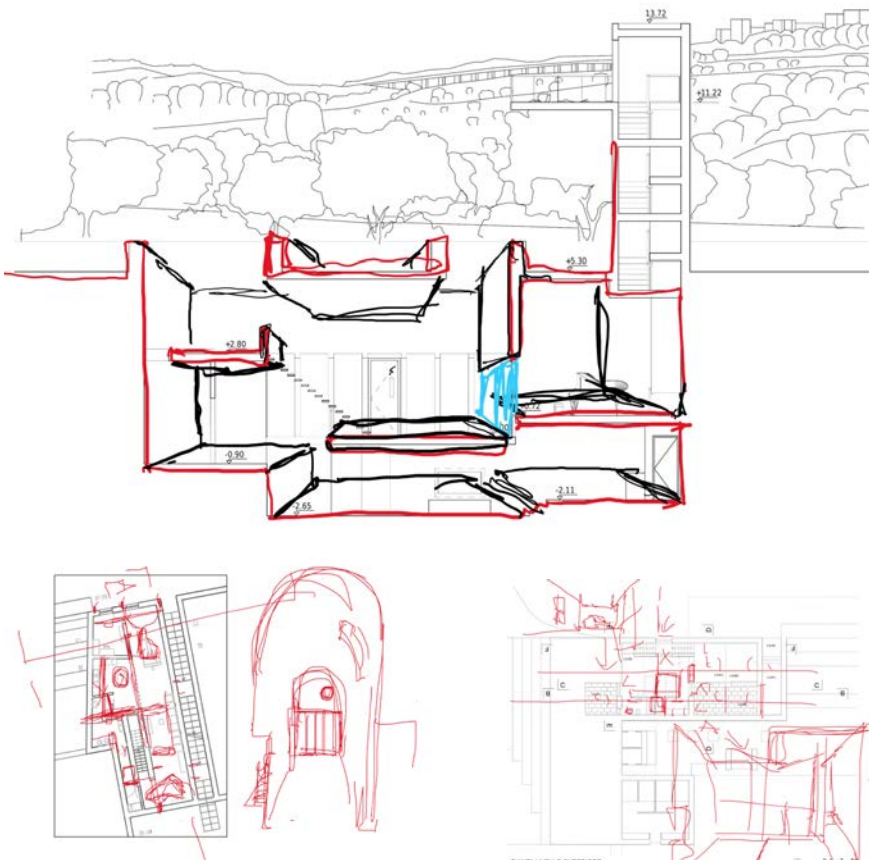


Fig.01 Laboratorio di Progettazione architettonica 1, a.y. 2019/20. Beginning of the course with site inspection in Agrigento; End of the Lab in online mode.

Fig.02-03-04 Laboratorio di Progettazione architettonica 1, a.y. 2019/20. Review on digital drawings.

Antonino Margagliotta, Paolo De Marco, Sete Álvarez Barrena
Beyond the screen

*University of Palermo, Italy
University of Extremadura, Spain*

Premise

Our didactic experiences in the field of architectural design, in courses that have always had a strong workshop character, have been varied in recent years and have been carried out in different variants that, when considered as a whole, allow us to reflect on the problems and the challenges faced during the pandemic¹.

Indeed, a didactic normally conducted with compulsory attendance suffered in a sudden and unexpected way from the cancellation of physical presence, the loss of contact with people and the “corporeality” of the project. Moreover, the absence of the physical space of the classroom (a scene inherent to the laboratory) soon led to the search for new tools and appropriate methods that must adapt to constantly changing situations, depending on the progress of the pandemic, transposing everything behind a screen.

Design staying at home

In response to the concreteness that comes from the relation with the place (which implies the experiential knowledge of the space of modification, the measure, its restitution), to the impossibility of moving, and to the obligation to “stay at home”, the first temptation might be to renounce the project and focus on “project research”². But in courses where design and research interact with the awareness that design is only learned (and taught) through design, practice remains a necessary and indispensable experience, even if it is carried out with different tools and new objectives. Another problem is the transfer of students and teachers from the classroom to home, mediated by a screen in front of which everyone is “alone”. Maieutics must then be oriented towards comforting students

and feeding their enthusiasm (in addition to that of the teacher himself) and breaking the silence of the telematic classroom or invisibility, since students are not always available to show themselves on video and interact with immediacy. For this reason, we “invent” strategies that stimulate discussion, involve students through many questions that transform certainties into doubts that must be resolved by them; we experiment with “tactics” to listen to voices, capture glances, and finally give the course a new “physicality”.

The difficulties are accentuated in first year courses with students who have attended in telematic mode for part of the last year of high school and for whom the lack of classroom experience prevents the possibility of socialization and the acquisition of a study methodology. It must be explained to younger students that this is a time of transition and that, especially in the public university, online instruction will never replace in presence instruction.

The search for a methodology

Beyond the critical questions, there is also an interest in experimenting with an appropriate and innovative methodology that does not abandon the prerogatives of the project (the relationship between thinking and doing, constantly with pencil in hand), at a time when one might think that the electronic medium could replace everything, confusing means and ends. The medium then becomes telematic teaching, but the aim is always to shape the designer’s thinking: the project is always a “means” to learn to think.

The emergency also forces appropriate project themes because it is impossible to have direct experience of places. So, in 2019/20, the labs started in presence have “transformed” into

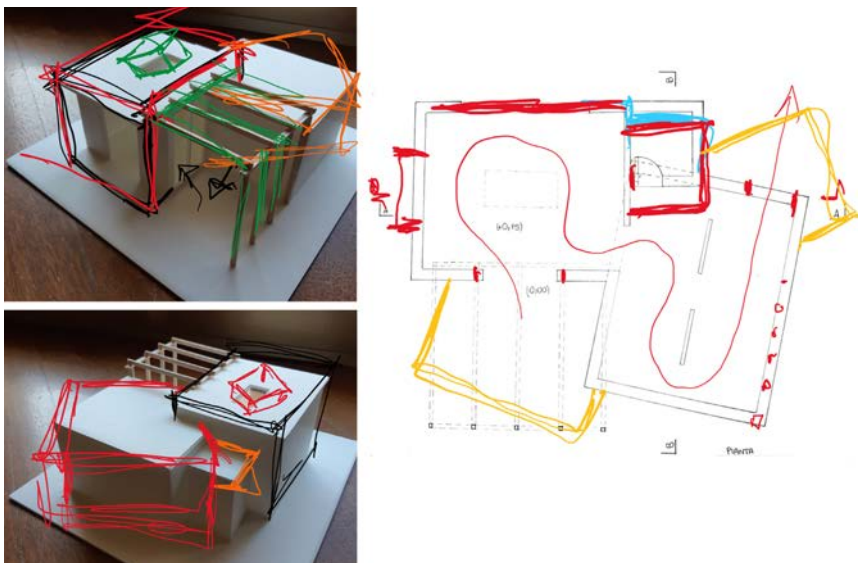


Fig.05 Laboratorio di Architectural Design, a.y. 2019/20. Review of the project on the study model and plan.

Fig.06 Laboratorio di Architectural Design, a.y. 2019/20. Study models with easily available materials.



Fig.07 Laboratorio di Architectural Design, a.y. 2019/20. Reflections on the visualization of the project.

distance learning courses forcing the change (and adaptation) of the mode and the teaching materials; we introduce already in 2020/21 the theme of living in the Covid19 (or post-pandemic) period: house for weekends or for quarantine, house in a rural context with spaces for work and online study. Even the “composition exercises” – which precede and prepare the project – get a new laboratory connotation, so that if you work analog first, then requires the use of the digital for the presentation of the products; or, in the courses that return to the classroom at a certain time, there is a transition from digital communication to printed paper.

Then, during the lockdown, after an initial hesitation in which the presentation of the work is done with the students sharing their screens, there is soon a shift to a mode in which the teachers receive the documents by email to discuss them in shared screen and revise them with drawings by mouse. Subsequently, the idea of introducing drawing on tablets with touch-screen pens represents “the turning point” that allows the teacher to discuss and adopt “the reasons for the project” not only with words, but - he too - with “pencil in hand”. The analysis, the interpretation, the clarification of the reasons for the solution of the design questions cannot do without the critical discussion of the drawings, carried out with the immediacy of the sketch, the graphic note that specifies concepts and proposes solutions.

With these modalities, the debate is extended to

the whole course, introducing a didactic action in which the project is discussed as if on a blackboard that supports the work of the students; in this, the attenuation of personal contact corresponds to a greater participation of all students in the work of each one, transforming the “individual” review into a collective correction; with the possibility that everyone understands different logics and design solutions. Over time, the sharing mode is perfected, uploading files to the platform and creating a cloud that facilitates sharing and builds a “historical archive” for each project. The method thus allows to “accept” the condition of telematic and digital work without abandoning manual work, mediated by scans of hand drawings, revisions with tablets that simulate the worksheet and even allow other possibilities such as drawing on the model photos, etc.

The online mode also offers the possibility of an articulated didacticism with community moments involving the whole course (the theoretical and training lessons, the seminars) and, in parallel classrooms, other activities in which teachers and tutors split up to meet groups of students and then, at the end of the day, meet again in a joint session to share their work. For the final year courses, teamwork (which is always an opportunity for growth, optimizing resources, nourishing discussion and sharing) must be “reinvented” to give autonomy to groups in which everyone participates from different places.

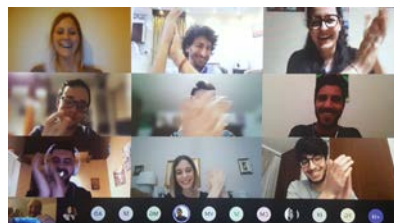
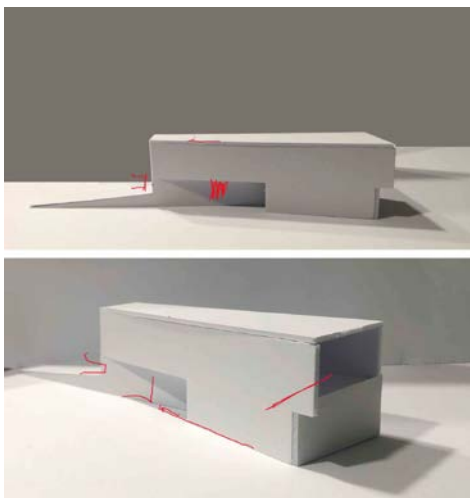


Fig.08 Laboratorio di Architectural Design, a.y. 2019/20. Review of the study model.

Fig.09 Laboratorio di Architectural Design, a.y. 2019/20. End of the Lab entirely carried out in online mode.

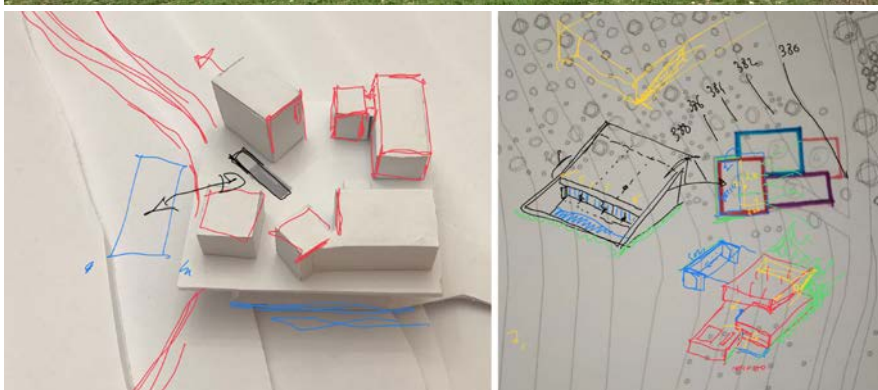
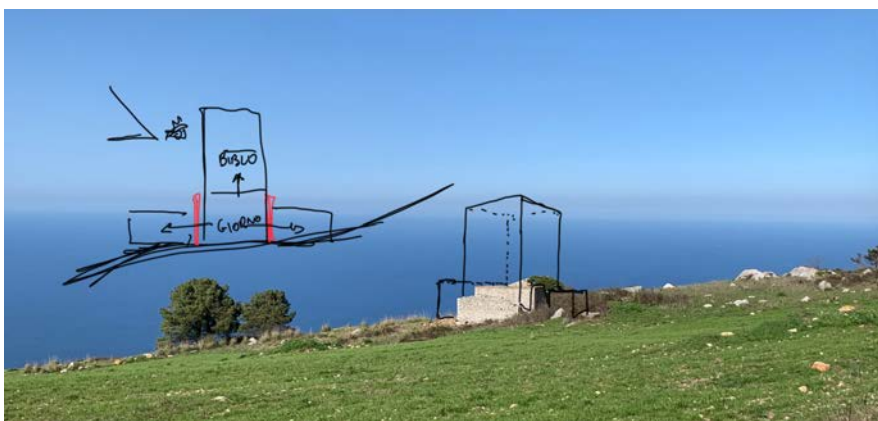


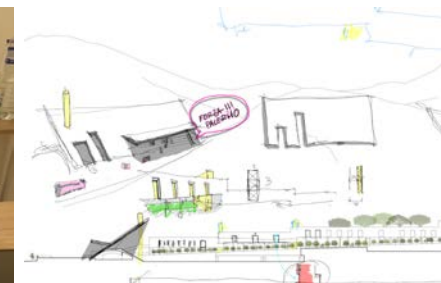
Fig.10 Progettazione Architettónica 2, a.y. 2020/21. Exploration of the project theme based on the image of the place.

Fig.11 Progettazione Architettónica 2, a.y. 2020/21. Review on study model and on hand drawn plan



Fig.12 Instrumentation for online teaching on digital documents.

Fig.11 Architettura e Composizione architettónica 3 con Laboratorio, a.y. 2020/21. Review on digital drawings



At every moment, however, the manual activity carried out at home must be stimulated (each house becomes a laboratory): through drawing “by hand” (especially in the first year courses), with the construction of models (study and presentation), using – especially during the lockdown – what students can easily find (making models with cardboard, cork, tin, iron wire, even spaghetti). And this in order to always bring the project to a “tactile experience” that can oppose the mediation of an extensive virtualization.

To carry out the lessons, long communications are avoided because they could become monologs of the teachers; students are constantly asked for comments and opinions, opening an exchange of views on recommended books and short texts (“digital postcards” uploaded weekly on the platform) to propose the theoretical reflection as a moment of debate.

Build community

For everyone (students, tutors, teachers), the end of the courses – both online and in presence – becomes a moment of great emotion: for the successful “enterprise” of carrying out the course without losing a day of teaching; for the quality of the results, due above all to the didactic experiment; for the verification of the didactic itself. In these

moments emerges the sense of responsibility that has animated everyone in a difficult period in which the regular running of the courses (especially in the first lockdown) was both a consolation and an exercise in the commitment to teaching-learning “togetherness”. The university, like the school, has confirmed itself as places of knowledge and cultural formation, but also of sociality in a time without socialization: trying to be a community with a different way of doing community.

Particularly moving, then, was the conclusion of the course which first returned to take place in presence (last June) with fifth-year students, for whom the end of Architectural Design Laboratory coincides with the last day of their university careers; for this reason, the students wanted to go back to the classroom and extend the lab with more full immersion days: thinking and working on the project on the printed drawing or with the construction of the model, discussion of the themes of architecture; participating in an international workshop, with the online participation of designers and professors from foreign universities (which paradoxically allows to perceive a closer world in the time of distancing), with a final surprise of an in-person guest (as a hope and desire for a return to “normality”), who generates even more interest because he returns to walk between the tables, calls

for silence, asks questions and listens to opinions. Finally, the conclusion of the workshop is a moment of celebration in a “safe” square in Palermo: an extracurricular signal (in many ways) with which the course also leaves the real classroom and returns to the spaces of sociality, to the streets, to the squares, to the city; in addition to restoring the “suspended” human relations.

Conclude to start again

Perhaps in the end it was not so difficult to deal with the new form of teaching, because the project is always an engaging experience, even with online teaching; certainly it requires a greater capacity for initiative and concentration, as well as sensitivity in dealing with “technical” issues with tools introduced to work easily from home, to involve students, to go beyond the screen. In fact, these experiences confirm that despite the technical-technological progress that also affects the world of design teaching, it is necessary to keep the cornerstones of architecture clear, as the method cannot ignore thinking and the concreteness of doing, since architecture is always experiential and not media.

Notes

¹ We refer to the courses held in the a.y. 2019-20 and 2020-21 at the University of Palermo:

- Laboratorio di Progettazione architettonica 1 (12 ects, 180 hours), CdS LM-4 Ingegneria edile - Architettura, a.y. 2019-20; prof. A. Margagliotta, tutor P. De Marco, first semester carried out in presence, second semester online, 28 students.
- Comunicare il progetto (3 ects, 75 hours), CdS LM-4 Ingegneria edile - Architettura, a.y. 2019-20; prof. P. De Marco, carried out entirely online, 12 students.
- Laboratorio di Architectural Design (10 ects, 120 hours), CdS L-4 Disegno Industriale, a.y. 2019-20; prof. A. Margagliotta, tutor P. De Marco, M. Trovato, carried out entirely online, 84 students.
- Progettazione architettonica 2 (9 ects, 99 hours), CdS L-23 Ingegneria edile, Innovazione e recupero del costruito, a.y. 2020-21; prof. P. De Marco, carried out entirely online, 15 students.
- Progettazione architettonica 1 (6 ects, 65 hours), CdS L-23 Ingegneria edile, Innovazione e recupero del costruito, a.y. 2020-21; prof. A. Margagliotta, tutor P. De Marco, carried out in mixed mode, 30 students.
- Architettura e Composizione architettonica 3 con Laboratorio (12 ects, 180 hours), CdS LM-4 Ingegneria edile - Architettura, a.y. 2020-21; prof. A. Margagliotta, tutor P. De Marco, S. Álvarez Barrena, started online, continued and closed in presence, 40 students.

² Perhaps taking up the condition imposed by Rem Koolhaas in a design workshop at Harvard University, that is to deal only in questions related to research. Then the proposal was controversial, especially due to the opposition of the students, and the activity was not completed: «Unfortunately, they don't want to research on design; they want to design».

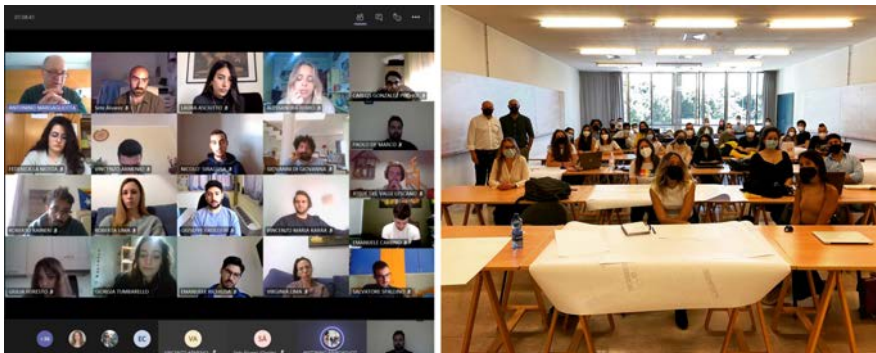


Fig.14 Architettura e Composizione architettonica 3 con Laboratorio, a.y. 2020/21. Beginning of the Course in online mode; End of the course in classroom.



Fig.01 Tokyo, Chiyoda-ku, Takebashi, Old Walls Imperial Park and contemporary cityscape (Olimpia Niglio, 2021)
Fig.02 BECC Laboratory 2021. Sites of the proposals (Olimpia Niglio, 2021)

DOI: 10.12838/fam/issn2039-0491/n0-2021/830

Olimpia Niglio, Tsuneaki Fukui
**BECC Laboratory in Tokyo. Urban lanscape, urban regeneration.
 Interdisciplinary academic class.**

Hosei University, Japan

Introduction

The different cultural experiences analyzed in the world and between the East and West, have found that the men have always related to the natural context from which they have drawn resources and opportunities for life. Even architecture was born out of respect for this dialogue that the communities were able to establish by relating to both terrestrial and astronomical nature.

The architecture has made it possible to make changes to the natural context in relation to the needs of the individual communities. But architecture has increasingly come to characterize itself for the functions required of it in close relation to the natural context and hence forms and therefore constructive typologies closely related to local resources: let us think of earth houses in the regions of the African continent or Latin American, to stone houses in central and southern Europe, to wooden houses in northern Europe and Asia.

Every place, also through the architecture, has told the story of men. Here we talk about Art and Architecture of the cultural landscapes. Cultural landscapes — cultivated terraces on lofty mountains, gardens, sacred places ... — testify to the creative genius, social development, and the imaginative and spiritual vitality of humanity. They are part of our collective identity.

Now the pandemic situation in the world allowed us to reflect on the importance of the “Human heritage: community” and above all on the need to enhance our natural resources and to establish a stronger dialogue between the natural landscape and built city.

In Japan, the ancient traditions and the observation of traditional architecture teach us the role of this important dialogue with the natural landscape.

However, the problems of regeneration and valorization of the traditional resources, within the city of Tokyo and in many Japanese towns, are important issues because they concern the landscape, environmental sustainability, the well-being of the community. In Tokyo, in several cases, we also see the management of the use of the territory that not respecting good practices for the protection of the environment.

So, for these important premises, it was remarkably interesting to start lectures research to be able to analyze the urban context and the best policies of urban planning and landscape protection in the Prefecture of Tokyo and in other small towns in Japan. In fact, the Japanese territory has extraordinary environmental and landscape features that it is essential to preserve and enhance. In large-scale urban developments, the role of urban planners has been very important for harmonious planning but now the reality is very critical, and we need to propose new solutions and new paradigms.

BECC Laboratory: Beauty, Education, Community, and Creativity

In 2021 at the Department of Civil and Environmental Engineering, Faculty of Engineering and Design of Hosei University in Tokyo started an international and interdisciplinary academic program aimed to analyze the urban landscape in Japan in relationship with the need to valorize its historical paradigms¹. Retaking the four elements of the cosmogony: air, water, earth, and fire — on which both the East and the West have conceived a close connection between the human microcosm and the natural macrocosm — we have reinterpreted these four elements with news four keywords: Beauty, Education, Community, and Creativity. Thanks to these four

keywords born also a small laboratory denominated BECC where twelve students are compared with these important topics and have analyzed them in rural small towns in Japan.

The concept of “Beauty” allowed us to reflect on the local traditions and the dialogue with nature; to come again to think about the “Education” on cultural heritage has been an important regeneration process that allowed us to read the city as a book made with many pages, many layers and with many historical stratifications (Fig. 01). Analyzing the cities is not possible to exclude the “Community”, because the city is the community and that “human heritage” define the content of every local culture. The Community is “Living Heritage”. The Community is Culture, is Heritage, and without it, we cannot realize anything. Community is life. The Community participates in the cultural policies and promotes local development according to with the common needs.

Observing the evolution of the cities, from the origin until the contemporaneity, we valorized the importance of the “Creativity” and above all the Social Creativity which is needed more than creativity in design for urban planning as planning projects often involve not only design change but also social reform. Urban planning and urban design projects bring greater satisfaction and pride when citizens’ ideas are accepted and implemented. However, in many cultures we are still far from this type of participatory planning, but it is now essential to implement it because the city exists if there are citizens. Therefore, it is necessary to preserve, manage and design urban landscapes with respect for their natural beauty, history, human needs, and creativity.

A Greek philosopher, Plato, says that “beautiful things are difficult”. The concept of landscape is a difficult subject. We generally think of landscape as a non-anthropogenic phenomenon, connected to nature. But that’s not the case. Knowledge of the landscape is a complex cultural process that sees different disciplines working together: from history, to art, to science, technology, social and political studies. So, landscape is nature perceived through culture.

Defining a landscape means analyzing it through a cultural process and where culture is the result of a theory and different experiments, direct experiences and therefore the result of knowledge and relationships that have been stratified over time. The landscape is therefore a cultural heritage.

The Urban Landscape defines the characteristics of

the cities and of the public space and the relationships that man establishes and builds in the urban context. The public space is a mirror of cultural traditions. In the specific case of Japanese cities, this specific study is extraordinary precisely because of the cultural diversity that has intervened throughout history and that today preserve important traces in the planning of the cities. This topic is very strong also in Tokyo. This is an interesting topic of “contemporary urban archaeology” where the traditions, that have generated urban contexts and their development, are amazing.

So, following the importance of these four keywords (*Beauty, Education, Community, and Creativity*), BECC laboratory has analyzed interesting towns in Japan and especially in Honshu Island at the Prefectures of Chiba, Gunma, Ibaraki, Iwate, Kanagawa, Shizuoka, Tochigi and Tokyo and in Kyushu Island at the Prefectures of Fukuoka and Kumamoto (Fig. 02). The proposed methodology has been organized in two steps: Analysis and Proposal. In the first step (Analysis) all students have identified the site and clarified the motivation for the choice with the support of ancient map, historical and actual photos, and specific details of the site; in the second step (Proposal) every student has elaborated a presentation with the support of images and graphics and written a text with the main purposes of the project and the dialogue with the local communities. These results are being published in a small e-book and shared with the students in different country of the world. BECC laboratory has also promoted a symposium with professors of different disciplines to discuss and share topics on the reading of the city and new methodologies of planning.

Conclusion

This academic project is not common at a faculty of Civil Engineering in Japan, but the dialogue between architecture, history, heritage, and civil engineering allowed us to realize an important challenge: to approach young engineers (Master’s class) to the reading of the urban landscape and to promote actions of urban regeneration. This experience helped us to promote the interdisciplinary dialogue and to demonstrate the importance to open participative meetings and not building walls among scholars.

Werner Heisenberg, a German theoretical physicist, Nobel Prize for the Physics in 1932, affirmed

[...] It is probably true quite generally that

in the history of human thinking the most fruitful developments frequently take place at those points where two different lines of thought meet. These lines may have their roots in quite different parts of human culture, in different times or different cultural environments or different religious traditions: hence if they actually meet, that is, if they are at least so much related to each other that a real interaction can take place, then one may hope that new and interesting developments may follow.

other cultures in the world.

More information on the interdisciplinary class:

Prof. Tsuneaki FUKUI (eng.) and Prof. Olimpia NIGLIO (arch.) https://syllabus.hosei.ac.jp/web/preview.php?nendo=2021&t_mode=sp&template=&no_id=2102365&gakubu_id=%E3%83%87%E3%82%B6%E3%82%A4%E3%83%B3%E5%B7%A5%E5%AD%A6%E7%A0%94%E7%A9%B6%E7%A7%91&gakubueng=ES

With this first interdisciplinary laboratory we have started a new academic path, and the results and the competences acquired by the students give us the energy to continue this project and to share it with

Notes

¹Students Master’s Class (April-July 2021): Yuiko SAKAI, Mayu WATANABE, Manami MORITO, Rio YAMADA, Yohito HORIKOSHI, Miki HOTAHA, Kenshin MAEZAWA, Kohei FUKUI, Sota NAKAMURA, Kohei AIZAWA, Haruna SHIMURA, Mao HARADA.

Camille Bidaud
Distance teaching of the history of architecture and urban design?

Higher National School of Architecture of Normandy, France

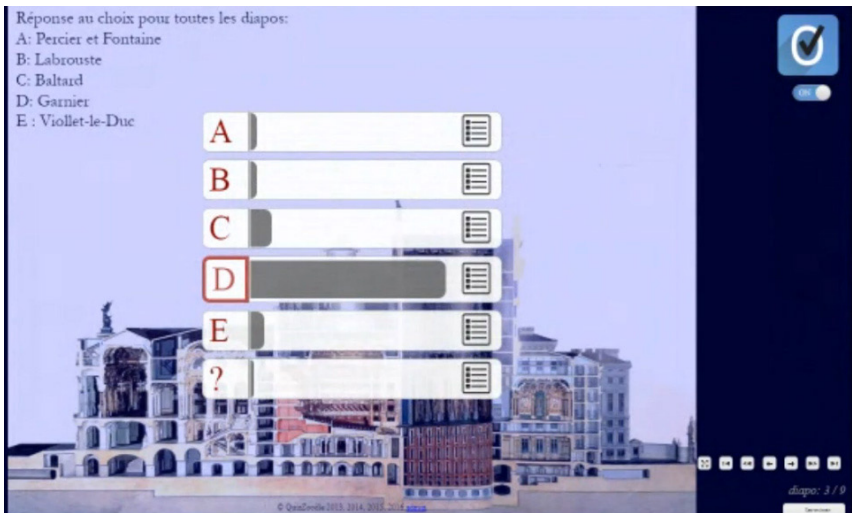


Fig.01 As soon as the students have responded to the quiz on their telephone, the result appears on the screen. Screenshot of a lesson with Camille Bidaud whilst using Quizzzle

Fig.02 Recording the slideshow and the webcam simultaneously allows the teacher to draw on the board during the lesson, even when at a distance. Screenshot of a lesson with Camille Bidaud via the Université de Normandie's webTV

Since at least the 1990s, the educational sciences have generally criticised the format of lectures¹ and have instead encouraged active teaching methods². However, in France, lectures without teacher-student interaction remain the most common teaching format in many subjects. The lack of change in this situation can be explained by the fact that this format is more economical in terms of staffing rates. In addition, the teaching of certain subjects, such as history, is not really conducive to work based on experience and collaboration. However, even in the context of a lecture, some active teaching exercises can be put in place by teachers who are interested in trying new approaches. The main obstacle is then the lack of training in teaching and educational sciences for the teachers in France. Having worked for nearly a year on an ANR Program (*Agence Nationale de la Recherche*, a national research organisation in France) on the hybridisation of higher education courses on bio-geo-sourced resources for renovation and construction, my research and training in this context encouraged me to think in this direction. Since the beginning of my teaching career, during lectures, like many colleagues, I have tried to diversify the course materials (using slideshows but also videos, drawings on the blackboard ...), as well as interactions with the students (open questions, quizzes) and various types of exam (including writing and drawing, vocabulary, timelines, etc.). Large groups of students make discussion difficult, and questions, like answers, usually come from students sitting on the front row.

Even before lockdown, I included small exercises during the lessons, initially on paper, then quickly switching to digital. Quizzzle is a small, free software that allows you to carry out online multiple-choice quizzes: the students connect using a QRcode

via their phone or computer, the quiz is projected on the screen in class, then they have a fixed time to answer on their phone. The answer then appears just afterwards in order to be able to debrief (fig. 01) before moving on to the next question. At the end of the series of questions, the automatically corrected results are sent to the teacher in the form of an Excel spreadsheet. This tool is extremely useful in my teaching as it includes image recognition exercises. Indeed, it can be difficult to know if the students recognise the buildings or cities mentioned in class. Thanks to Quizzzle, the students and I can check on their knowledge of the main references. On the other hand, it requires some preparation beforehand from the teacher, and also technical ability, especially when using pictures. Another advantage is that it creates a short, fun break of 5 to 10 minutes during the lecture, which helps to regain the students' attention.

However, the complications brought on by the pandemic obliged me, like all of us, to review my teaching methods. I am fortunate to be in a school where the IT department is very proactive. They gradually provided us with suitable open-source digital tools, hosted locally by the Université de Normandie or directly at school.

During the first lockdown, the school gave us access to the Université de Normandie's webtv. The teacher can record his voice over a slideshow. He can also use his webcam. After recording the lesson, it is also possible to add text, opinion polls, or links at specific times. When the lesson is finished, students can watch the lesson by streaming it on the platform. The main advantage of this system was that it was available as soon as the school had to close down, allowing continuity in teaching from the outset. Another advantage was that regardless

of the quality of the internet connection of the teacher or students, the recording and viewing of the lesson was still possible. Being able to film myself in addition to using the slide show allowed me to make drawings on a whiteboard, encouraging the students to take notes in the form of diagrams (fig. 02) and additionally a way of maintaining some form of human contact for the students who were isolated at home.

Despite the accompanying quizzes, the short videos attached to the lesson and the students' satisfaction with this teaching approach, I was not happy with the total lack of interaction. This meant not knowing whether students were following or not, not having any questions, and not knowing when their attention was waning. According to studies, during a lecture without active teaching methods, attention drops after 20 minutes, with shorter and shorter cycles as the lesson continues⁴. So, when students are alone in front of a screen it is quite possible that the drop in attention will be that much faster. In addition, the feedback received by the school on the lessons via webtv was that many students took advantage of the recorded lessons to pause or slow down in order to take as many notes as possible, creating a significant work overload. To limit this problem, teachers would have had to drastically shorten the duration of their lessons, and limit the number of examples given, to prevent the students from making lists of notes without taking any critical distance. In the absence of other solutions, the webtv was therefore initially good in terms of pedagogical continuity, but not satisfactory in the long term.

During the first lockdown, using the Moodle allowed me to create quizzes and so to keep some of the benefits of using Quizzodde. For me it was also a question of getting started with the assessment tools to prepare for the final exam. Moodle is an open-source online education platform used by many universities and schools. Extremely exhaustive, it allows for links between the different services implemented by the IT department (web TV, the Bigbluebutton videoconferencing system, etc.) as well as providing a tool for carrying out the final exams in a given time or for some self-correction exercises (written text, sending documents in, multiple choice questions, gap fill exercises, drag and drop, etc.), or written work which can be collected by the teacher, with an added plagiarism detection tool (via the plug-in Compilatio).

However, the final exam could not be like the one normally given in school exam conditions: all the students having access not only to the internet, but

also to their lesson notes and all their classmates, it was not really possible to ask questions on the course content. Similarly, any graphic exercise posed potential technical problems (not insurmountable but time-consuming and stressful for the students). At the start of the 2020-2021 school year, everyone had to wear masks in school but teaching could be done face-to-face and then later as a combination (both face-to-face and distance teaching). Whether using the Moodle videoconferencing system or the school's webtv, this combination had very obvious limits: the students following at a distance could not speak. Indeed, unless the teacher had a second computer, allowing him or her to follow the chat at the same time (further complicating the teaching sessions in the amphitheatre), it was not possible for the students following from a distance to participate, creating an obvious inequality. In addition, the many technical issues were quite discouraging.

From November until the end of the school year, the lessons were all done at a distance. I then made the choice of videoconferencing via the Moodle, recording the conferences for those who might have technical or medical problems. Although the students never turned on their cameras, the chat allowed for a minimum of interaction, and the equivalent of the first row was always ready to answer or to ask questions.

I tried reusing the Quizzodde, but this required the students to have 2 screens, and moreover the quality of the screen sharing did not allow the exercise to be carried out easily. I therefore resumed the quizzes outside of the lesson via Moodle (fig. 03).

In order to take into account the attention span of the students and to encourage them to think for themselves, and also faced with the technical difficulty of showing them video extracts during the videoconference, I decided to ask them to work independently before the lesson, thus reducing the duration of the lecture. Before each class, students had to watch a documentary (previously chosen from the Arte architectures series) and prepare answers to a questionnaire sent beforehand. Each class session therefore began with a "discussion" on the questionnaire. Although no one put their microphone on, they could write their answers in the chat. I then discussed the answers which served as an introduction to the class, and kept referring back to the film throughout the session. In addition to using the chat, I also used the polling tool to maintain a minimal level of interaction. However, without being able to see the students, it was still difficult to perceive their level of fatigue and

attention.

Moreover, one issue which is relatively little discussed but is essential is that of the required working conditions for the teacher, just as for anyone working at a distance. The teacher must have: a computer with two screens (one for the slideshow, the other for additional services like video feedback, using the chat, recording tools, etc.), a webcam, a good quality microphone, a good internet connection and a calm and neutral space to work in.

Most of the software or platforms listed here are relatively easy to access for students participating in the activities. But for the teachers, the multitude of various tool settings makes it difficult to get started without any prior training, thereby limiting their use.

The methodological transformations required when implementing active teaching methods are not all compatible with distance learning. However, mastering a multiplicity of tools makes it possible to maintain teaching which is relatively qualitative and diversified, whatever the conditions. The use of these tools remains, however, time-consuming and a lot of motivation is required to train oneself on how to use them and to imagine the specific applications to one's teaching.

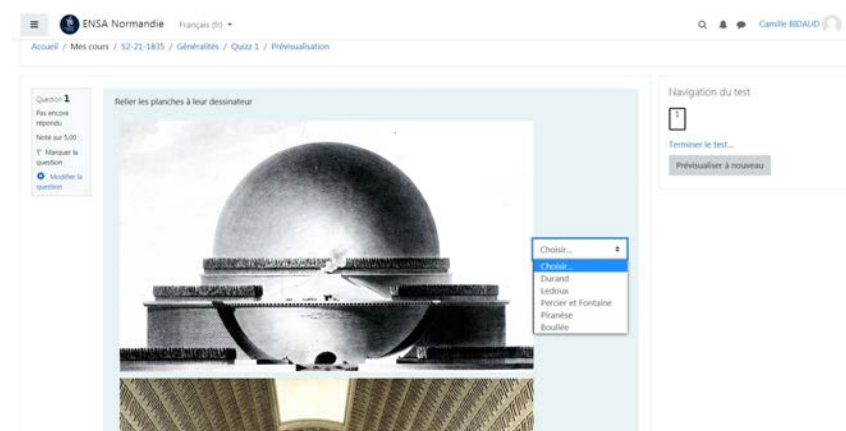


Fig.03 Different self-corrected quizzes can be created with the Moodle. Screenshot of a quiz created by Camille Bidaud on the Moodle.

Notes

¹ Altet Marguerite, «The university lecture: a scientific-pedagogical discourse without articulation teaching-learning», Recherche & formation, 1994, n° 15, pp. 35-44

² Slavin, Robert, «Research on cooperative learning: consensus and controversy», Educational leadership: journal of the department of supervision and curriculum development, 1990, pp. 52-54

³ Regnier, Nicolas, «Instant response systems for active pedagogy», 21st French Congress of Mécanique, August 26 to 30, 2013, Bordeaux, France

⁴ Bunce Diane, Flens Elizabeth, Neiles Kelly, «How long Can Students Pay Attention in Class? A Study of Student Attention Decline Using Clickers», Journal of Chemical Education, 2010, n° 87, pp. 1438-1443

Bradley Walters

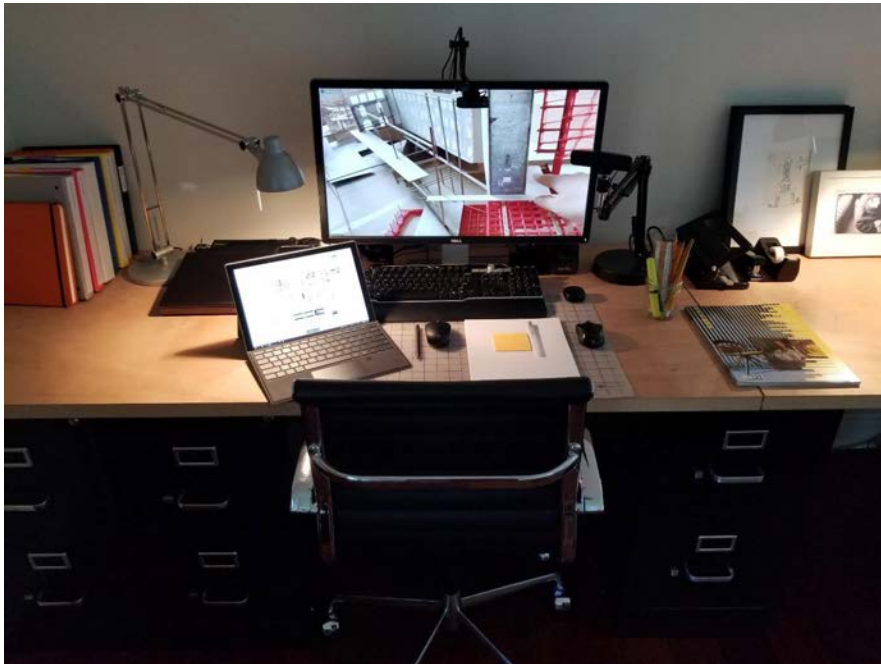
Growth Opportunity: Transforming Studio-Based Education through Digital Tools during the Global SARS- CoV-2 Pandemic at the University of Florida*University of Florida, United States of America*

Fig.01 Typical desktop configuration, prepared for online instruction. Note overhead document camera and microphone, external webcam and stand (on right-hand side of monitor), and tablet with pen-type stylus (in foreground)

In *Learning from Our Mistakes*, Henry J. Perkinson (1930-2012) suggested that there are three primary approaches to education: education as initiation, education as transmission, and education as growth (Perkinson, 4-5). In architectural education, we see all of these models well-represented. In some cases, initiation and the notion of “teaching through example” is primary. This educational model is structured around an idea that students learn to be architects by observing an architect, doing architectural work. In a classical atelier model, the architect, faculty member, or tutor is positioned as a master, with students working and learning below them as apprentices. It depends on a clear hierarchical structure, as well as the idea that learning takes place through a process of initiation. The idea of education as the transmission of information from one person to another is a persistent one. It is the idea at the heart of the lecture format, where those with knowledge (architects, faculty members, tutors, etc.) share that knowledge with others. Education as transmission is also about a fundamentally closed and limited body of knowledge that can be parsed, ordered, packaged, and relayed from person to person, or from generation to generation. As the receiver, the pupil’s knowledge is always limited by the extent of the teacher’s knowledge in this educational model. The creation of new knowledge in architecture, however, requires more than the initiation into a pre-defined profession or the transmission of a limited body of knowledge from one person to another. It builds on Perkinson’s idea of education as growth. In this model, he suggests that “the teacher’s task now is to create a proper environment, an environment that will promote ‘the growth of the individual’” (Perkinson, 4-5). We see this in an increasing

number of assessment models as well, where the focus has shifted from what is taught to what is learned. Course objectives have been replaced with “student learning outcomes.” Education, in these models, is measured by the transformation and growth of students through the course of the class. At the University of Florida School of Architecture in Gainesville, Florida U.S.A., we deploy a studio-based educational model that allows faculty, graduate teaching assistants, and students to collaborate in the advancement of architectural knowledge. The studio model is less hierarchical than the atelier model, relying on frequent group-based discussions to further the work and thinking of everyone in the room. Each participant (students and faculty alike) are challenged to contribute equally and meaningfully during discussions, asking difficult questions of each other to further both the conceptual approaches and the technical resolution of the work.

This educational process is fundamentally about the growth of individual students and the collective advancement of the discipline. We work on the development of processes of thinking and making that are reflective, critical, and expansive. It requires educational processes that are immersive and engaging, allowing for rapid feedback loops between individuals. The participatory space of the studio is crucial.

During the SARS-CoV-2 pandemic, our in-person studio courses transitioned to fully online delivery methods to reduce community transmission of the virus. The immersive and rich studio-based instructional model was required to transform and adapt to accommodate new online teaching methods and instructional tools. The challenge: How can we preserve the focus on students’ educational growth



Fig.02 Overhead document camera allows for real-time sharing of materials located on the tabletop, including pencil/pen sketches, models, and printed reference books. Hand gestures can also be used to describe formal relationships, supplementing other modes of communication. Note that the microphone is sitting on top of the document camera, positioning the microphone within approximately 25cm (10-inches) of the mouth of the speaker, allowing for very clear audio. It is located just above (and outside) the field of view of the webcam.

Fig.03 External webcam is supported by an adjustable stand, allowing it to be moved close to the speaker and overlap the screen. This allows for better eye contact between instructor and students.



and provide rapid feedback loops at a distance, using technological tools as needed?

To make this transition possible, we engaged numerous technological tools. We used Zoom for conducting synchronous, real-time web-based classes. One of the most important software tools we deployed was Miro, a cloud-based collaboration program that functions like an infinite pin-up space. Students would post work to Miro in advance of every class, and the studio discussions would involve presentations of work, discussions about other student's work, and sharing of hand-drawn notes, web-links, and reference projects. The work from each day was posted adjacent to the student's work from the prior class, allowing students and instructors to look back and read the trajectory of the work through the multiple iterations. Students were able to access the Miro boards at any time outside of class, to review the work of their peers and to review comments and notes posted by the instructor.

For most classes, I would use two computers simultaneously, allowing one computer to manage the online class (including microphones, cameras, etc.) and another computer that could be used as a tablet for making drawing annotations during class. The Microsoft Surface Pro 7 proved incredibly facile for real-time drawing during class. The pen stylus was highly responsive, allowing for a seamless discussion that could fluidly move from drawing to drawing as needed during class.

Cameras were important. All students and faculty used web cameras to allow for everyone to see one another and to facilitate non-verbal communications. I would typically use two webcams for class. One showed my face and upper torso, while a second overhead camera allowed for sharing of the desktop space. This second document camera was useful for the sharing of printed books, physical materials, model constructions, hand sketches (on paper), and hand gestures. Both cameras were mounted on adjustable stands allowing them to be moved as needed during class. For sharing or more intricate model constructions, students would often use their personal cell phones or tablets as secondary web cameras. This would allow them to easily move around their models, zoom in, and literally inhabit the model with their camera.

And last but not least, clear, high-fidelity audio was critical. My setup typically involved a lavalier microphone, mounted overhead very close to my head as well as external speakers that could be independently adjusted. Students would encounter some feedback issues if they joined the class from the same physical space. In these cases, it was important to toggle microphones on and off carefully to avoid feedback.

Throughout this transition, the central motivating goal was to push the technology to facilitate highly responsive educational environments that stimulated and engaged the students in multiple ways. Some of the tools, like the cloud-based Miro



Fig.04 Secondary Microsoft Surface tablet computer with pen/stylus, mouse, and keyboard interfaces. Pen interface is essential for real-time digital drawing with students and navigating shared digital software platforms.

platform, allow for an even better educational environment than more traditional plotted drawings in a physical studio space.

The following specific technical tools were deployed, and are provided here for reference:

Hardware:

1. Computer #1: For Running Online Meetings + Audio/Video + Document Camera + Document Sharing:

- Dell® Mobile Precision M4700 laptop computer: 3rd Gen Intel® Core™ i7-3740QM Processor (2.7GHz, 6M cache), 16.0 GB DDR3-1600MHz SDRAM 4 DIMMS, AMD® FirePro® M4000 Mobility Pro Graphics with 1GB GDDR5, 500GB 2.5" 7200rpm Hard Drive, Dell Wireless™ 1504 802.11g/n Single Band Wi-Fi Half Mini-card (2013)
- Dell Precision E-Port Plus Docking Station Port Replicator (2013)
- External Storage: Western Digital 2TB Portable External USB 3.0 hard drive (2013)
- External Monitor: Dell P2815Q Ultra HD 28-Inch Screen LED Monitor, 60 Hz refresh rate, 71.12cm (28-inch) screen size, 4K UHD 2160p resolution
- Logitech M317 Compact Wireless Mouse
- Dell Y-UK-DEL1 USB hub multimedia internet wired keyboard
- Webcam: Logitech C925E Webcam with 1080p

HD Video and Built-In Stereo Microphones, USB

connection, UVC H.264 encoding, 78-degree field of view (2020)

- Webcam Stand: Oxendure webcam stand with 55.88cm (22-inch) suspension boom scissor arm and heavy desktop-mounted base (2020)
- External Microphone: Fifine USB Lavalier Lapel Microphone K053, with sound card for PC and Mac computers (2020)
- External Speakers: Acoustic Audio 20X USB 2.0 powered computer speakers, with (2) 70W active satellite speakers and USB 2.0/3.5mm connections
- Overhead Document Camera: IPEVO V4K Ultra High Definition USB Document Camera, with 8 megapixel camera (3264 x 2448 resolution)

2. Computer #2: For Interactive Real-Time Drawing, Annotations, and Resource Sharing

- Microsoft Surface pro 7, Intel Core i7, 16GB RAM, 1TB Memory
- Surface Pen
- Microsoft Bluetooth Mouse
- Surface Pro Type Cover

3. Continuous electrical service, provided by Gainesville Regional Utilities (GRU)

4. Internet Access:

- Wired category 5e ("Cat 5e") cable service to residential address (Gainesville, Florida U.S.A.)
- Internet service plan with up to 150 Mbps download, up to 10 Mbps upload, and 1,280 GB data per month (Actual service, as tested: 10.2 to 23.7 Mbps download, 8.5 to 8.9 Mbps upload, 18 to 21 ms ping, and 2 to 15 ms jitter; service provided by Cox Communications, Inc.)
- Internet Modem: Arris TouchStone CM8200A Modem
- Wi-Fi Router: T-Mobile Personal CellSpot, Wi-Fi CellSpot Router, Asus TM-AC1900 Dual Band (2.4GHz and 5GHz), 3x3 Wireless-AC 1900 Gigabit Router
- Wi-Fi Extender: Netgear® WiFi Mesh Range Extender EX8000, with AC3000 Tri-Band Wireless Signal Booster & Repeater (Up to 3000 Mbps Speed)

5. Printer + Flatbed Scanner: Hewlett Packard (HP) OfficeJet Pro 8710 wireless color printer and scanner

6. Lighting:

- Directed task lamps: IKEA Antifoni 40W Halogen desk lamps (2)
- Facial illumination: IKEA 10” Fado table lamp with LED bulb (1)
- Ambient natural and artificial light from numerous sources

7. Supplemental:

- Alvin TM 2224 translucent self-healing cutting mat, 18”x24” (45.72cm x 60.96cm)
- Rapid, paper-based model-making materials at the ready
- MUJI Gel Ink Ballpoint Pens, 0.38mm Black
- Ticonderoga pencils, wood-cased #2 HB Soft
- X-ACTO XLR Heavy Duty Electric Pencil Sharpener
- Drawing paper

Software:

1. Windows 10 Enterprise edition

2. Zoom (Zoom Video Communications, Inc.; <https://zoom.us/>) – for conducting real-time or synchronous face-to-face online meetings

3. Miro (<https://miro.com/>) – cloud-based virtual pin-up space

4. Canvas Learning Management System (Instructure; <https://www.instructure.com/canvas>) – course management

5. The full range of architectural design and drawing software, including Rhinoceros 3D (Robert McNeel Associates), AutoCAD/Revit (AutoDesk), Photoshop/InDesign/Illustrator (Adobe), Lumion (Act-3D), Enscape 3D, and others as required for specialized tasks (Grasshopper 3D, Ladybug tools, etc.)

6. Traditional desktop and cloud-based word-processing software, including Microsoft Word, Google Docs, and Apple Pages.

Necessary but typically overlooked:

1. Acoustically separated and quiet room: Where

this is not available, headphones with integrated microphones become essential.

2. Ready access to numerous reference books, both in both physical and digital formats: The ability to quickly reference physical books proved exceedingly helpful.

3. Coffee: De’Longhi Combination Espresso/Coffee Machine BCO430 and Lavazza Perfetto Ground Coffee

4. Spousal support and/or dependable child care: Teaching in this format is impossible for parents of younger children without the support of others. This is the foundational requirement that allows for everything else to happen.

Bibliography

Perkinson, Henry J. *Learning from our Mistakes: A Reinterpretation of Twentieth-Century Educational Theory*. Westport, Conn: Greenwood Press, 1984.

Walters, Bradley and Lisa Huang. 2018. *Oculata Manus: On the Role of the Body in the Making of Creative Minds*. In *Developing Creative Thinking in Beginning Design*, edited by Stephen A. Temple. Routledge. 225- 239. <https://doi.org/10.4324/9781315622927>.

Wilson, Frank R. *The Hand: How Its Use Shapes the Brain, Language, and Human Culture*. New York: Pantheon Books, 1998.

Zambonini, Giuseppe. *Notes for a Theory of Making in a Time of Necessity*. *Perspecta* 24 (1988): 3-23.

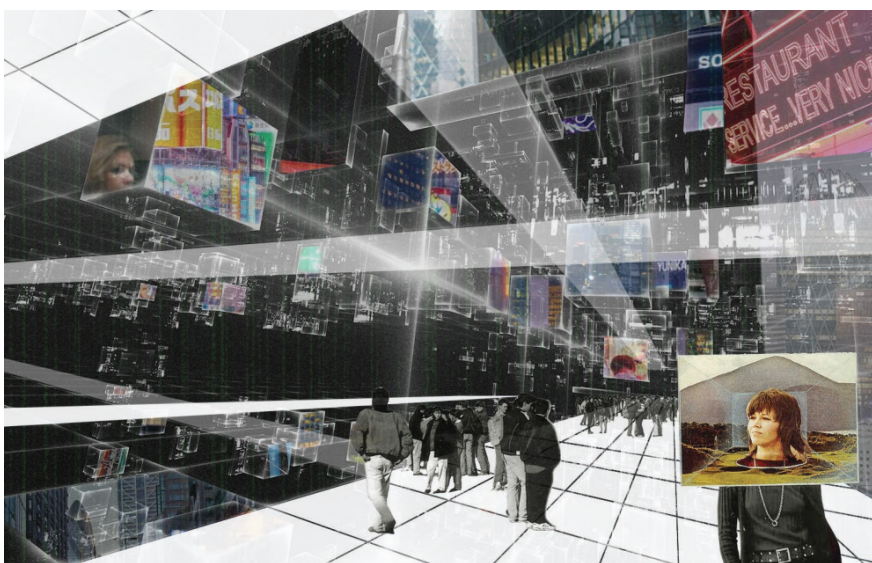
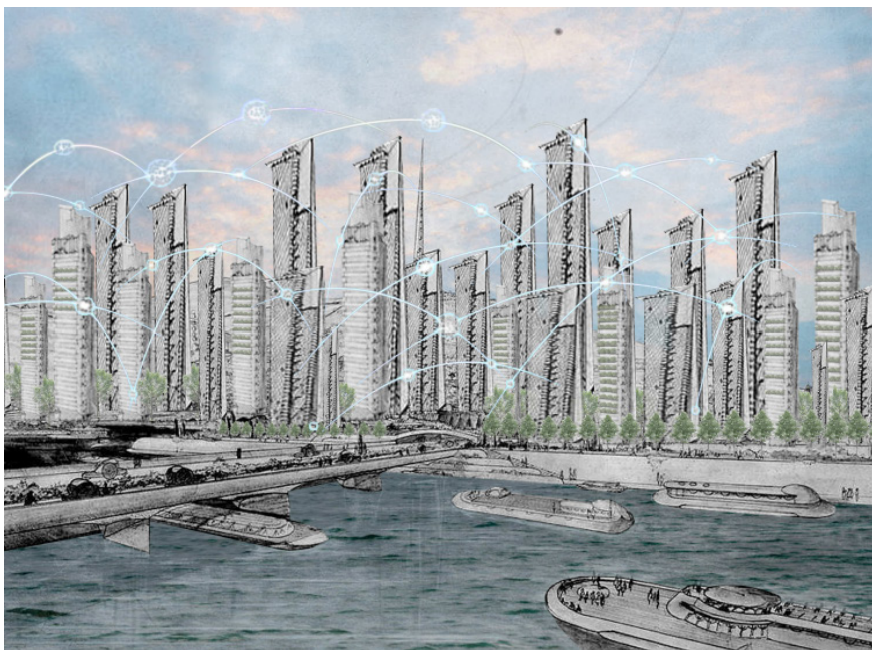


Fig.01 Photomontage LEMIEUX Perrine, ENSA de Normandie, 2020

Source : A drawing of the "Broadacre City" as envisioned by Frank Lloyd Wright. (Wright, Frank Lloyd (1867–1959) © ARS, NY; Living City. Presentation Drawing (River View). Location: The Frank Lloyd Wright Foundation, Scottsdale, Arizona, USA.

Fig.02 Photomontage LAURENCE Léo, ENSA de Normandie, 2020

Source : Superstudio, Il Monumento Continuo, 1969-1970 (FRAC Centre); Haus-Rucker-Co, O2 Reservat, 1970.

Milena Guest, Antonella Di Trani, Roula Maya

Reinventing the pedagogy: about architectural and urban utopias. The experience of teaching the humanities and social sciences in a school of architecture during a pandemic.

Higher National School of Architecture of Normandy, France

Metropolitan futures and revisited utopias

The frenzy of the metropolises calmed down completely during the pandemic, when the economy seemed to come to a standstill, thus raising the question of their sustainability. Perceived space is often dislocated by "flat" screens which are interposed between our bodies and their immediate surroundings, while the space we live in is reduced to the "15-minute city". The continued teaching of architecture is responsible for the future and training of architects-to-be; the renovation of existing buildings to design built forms is becoming more and more significant, and the health crisis is shaking up our relationship to space in an unprecedented way.

The idea of critically re-reading "past" architectural and urban utopias was reinforced by this particular context. It not only reveals long-standing socio-economic and political contradictions and paradoxes but it is also a vector of the recent upheavals that inevitably accompany the birth of other modes of living and production. We consider two main characteristics of these utopias in relation to the respective contexts in which they emerged. The first is their tendency to create a "placeless" structure of the territory, based on the extension in space of an archetypal plan; the second is their unity from a formal point of view, arising as a criticism of the realities experienced by societies and as a justification of the conditions for another social and spatial "order". In this sense, the meanings and functions of these utopias, as modalities of social imagination in the field of architecture and town planning, shed new light on how contemporary spatialities are produced. On the one hand, they refer to a proposition for an alternative society, whose organisation is reflected in the representation of

the built environment, a living environment where built forms suggest a kind of "synthesis" of social connections. On the other hand, they represent the questioning of power through the redefinition of the very principles of how spaces are ordered. How can we then take into account the potential for transformation that some of these "past" utopias conceal and how can we make this into a material to be analysed, allowing us to better understand metropolitan futures? What will future generations of architects retain, assuming the heuristic value and the creative potential of such an approach?

The study of documents and the tutorials (*travaux dirigés*) presented in this paper have been chosen in connection with the course "From cities to metropolises", whilst still remaining relatively independent in terms of content. The objective of this course is to get students to think about the foundation and extent of interpretation of different approaches to understand the metropolitan phenomena. The main question thus being the continuing relevance of certain concepts, notions, models and tools that have been developed, particularly throughout the twentieth century and up to the present day, with the aim of understanding the relationships between spaces and contemporary societies.

The question of architectural and urban utopias introduced at the time of the health crisis by two specific classes made it possible to define a theoretical framework, allowing for a consideration of the major changes occurring in theories on the city at different periods and questioning certain changes in approaches to urban planning. With the development of town planning, the 20th century in particular has seen singular connections between utopias and realities that have shaped the contemporary Western world. While some authors

agree that globalisation for a long time contributed to the utopian impetus before becoming one of the main reasons why utopian thinking then ran out of steam, or at least why it was no longer a subject of research (Wallerstein, 1998; Picon, 2000 ; Paquot, 2018), others have managed to show that, on the contrary, utopia in general “concerns us more than ever today, in particular because of the role it gives to space and because of its underlying logic”(Choay, 2005).

This theme was thus chosen and newly included in the pedagogical program, replacing a trip to a European metropolis and an intensive course for analysing and understanding major references in architecture and urbanism. The critical study of architectural and urban utopias, proposed as a substitute during the pandemic period, involved looking at how different territories are structured, with an emphasis on the formal aspects and on relationships between the different elements. The aim was to question the “legacies” of these utopias and to explore not only the way in which they influenced the architectural and urban design at the time, but also the way in which they have contributed to the contemporary transformation of territories, even if it is only through their ideology.

The idea of rupture that they carry also helps us to understand a certain renewal of imagination and of urban planning activities which can sometimes be stuck in anticipated certainties (when compared, for example, to models of urbanisation or town-planning representations which are seen as virtuous). Making it possible to glimpse or grasp evolutions of social representations regarding a collective destiny, or a shared project of “living together”.

Pedagogical practices with regard to active teaching methods: towards an exploratory approach of research

The context of the pandemic forced the teaching staff to find new places for shared reflection and learning, to redefine the fields of research, to adjust teaching methods by questioning the conditions for the production of new knowledge in architecture. The course entitled “From Cities to Metropolises” was taught via the Moodle platform. Students could access a detailed outline and written summary for each lesson, uploaded to the Cloud, and which were then discussed. Conversely, the work submitted to the Cloud by the students, relating the major stages in the progress of their research and questions, was the subject of written feedback from the professors;

all of the written work produced by the students, relating to different texts and graphics, was annotated.

Faced with the lack of reciprocity in communication, after a short period it was decided to create a change of pace, diversifying ways of communicating using different media (videos, recordings or transcription of interviews, virtual site tours etc.). A large majority of the students benefiting from this teaching approach (nearly 100 out of 120) preferred the use of these active methods. They expressed a preference for “*in visu*” discussion, via the electronic platform, rather than only written follow-up. Analysis of the documents and their interpretation through freehand drawings allowed the architecture students to become aware of ideas through physical movement as well as expressing words and concepts orally.

This dual way of “sharing” content – both immediately and at a later time – had an impact on the way tutorials were organised. Each student was involved in two different kinds of teaching approaches.

The first approach consisted in creating a corpus of documents regarding the architectural and urban utopias developed since the second half of the 19th century and during the 20th century, as well as contextualized critical analysis. This was based on the progress of individual student research with the aim of creating a kind of fertile ground for thinking differently about how metropolises are made.

The second approach involved teamwork: groups of students were formed according to shared questions and the choice of references that they were working on. At the heart of the course was the objective of creating a link between the theoretical and practical knowledge the students acquired on the subject of future metropolises, between utopia and reality. The students’ final piece of work, in the form of an essay and a photo-collage, had to take into account this experimental research and the new working methods, to show the students’ evolving opinions, both individually and collectively.

This *modus operandi* thus opened up a unique temporality, specific to teaching done in the context of the pandemic. It included different stages of both collective and individual work, creating links between the chosen theme and the identified sources of information. However, the empirical approach and the way it could be implemented were altered, because the places where investigation could be carried out were no longer accessible. This gave rise to new investigative practices and thereby the

creation of a new object for research, simply due to the impact of the unprecedented context in which the work was done. As the use of active teaching methods becomes more widespread, it is also doubly impacted by the learning environment and the appropriation of sources of information.

During a pandemic, the learning process of architecture students undergoes a forced decontextualisation, moving from an exclusively institutional environment to a domestic environment connected to the private status (or private use) of space and the intimacy of people’s homes. Moving learning practices from a public context, and a space which is exclusively dedicated to them, into a private space, where learning is not necessarily a priority. This interrupts the initial unity of place, spatially defined and structured by its pedagogical function. This function can therefore no longer be considered without the additional uses of space as a place of daily life and interaction. This transposition or re-contextualization thus forces the student (especially in a situation of strict lock down) not only to develop a certain cognitive skill, but also to rethink the limits between public and private spaces, and to reconsider the workspace with regard to the place of residence.

By turns, it is a question of reinvesting a space “for oneself” according to new constraints. Through playing with the different possibilities of shaking up the order of the domestic space, in a controlled way, the students applied different “tactics” to explore inhabited places. These “tactics” (Michel de Certeau, 1980) can result in playing with and bypassing the initial function of spaces, in order to accommodate new situations for learning. However, the interactions that take place “at a distance” are different to the so-called “classic” interactions which would normally take place there. These interactions, according to Erving Goffman, can be seen either as a kind of avoidance (by preserving other people’s territory in some way), or as a ritualised or regulated form of contact, with very strict social rules. In this learning process, how the different sequences of communication and discussion were organised was therefore very important, because this governs the “joint presence” (Goffman, 1974) of students and professors through their use of the digital tool. This organisation involves imagining, synthesising and formalising a protocol, participating in the organisation and appropriation of knowledge, and in the (re)definition of different roles, in order to ensure the proper coordination and management of “shared” time. Apart from these considerations, it

is also the responsibility of professors to ensure the feasibility of any research requested of the students, including in terms of setting up sufficient material resources in line with the expectations of the course (student access to digital tools and databases remaining unequal and unstable, depending on each person’s resources and level of comfort).

The evolution of the students’ questions about the futures of metropolises was stimulated by the presentation of and discussions around each person’s research and analysis results, using multimedia digital supports. The linearity of the sessions was broken up to a certain extent through alternating different phases of work with, on the one hand, theoretical and methodological input, and, on the other, phases of critical analysis and creative research. These changes in dynamic were positive and were intended to allow the students to better formulate and express their thoughts. This helped them to give importance to a critical idea using suitable descriptive tools, to draw parallels between architectural and urban utopias and to become aware of how these structure urban spaces. As such, the creation of photomontages by the students allowed them to test different assemblies of materials - collected during their research and produced by themselves - in order to make their presentations more intelligible. All these required elements thus question the role and posture of the professor, who, “at a distance”, must develop the students’ intellectual curiosity and their ability to associate together ideas and texts that they have read, to formalise and develop them, and then to enjoy sharing them with other students and professors.

Apart from these elements, the rules and procedures for teaching, as well as the students’ learning conditions, were affected by various changes, dissonant effects and limits due to the communication via interposed screens. Thus, sometimes everyday happenings, “the banal”, the everyday, the obvious, the common, the ordinary, the infra-ordinary, the background noise, the usual” (Pérec, 1989), can interrupt a teaching session but suddenly seem to have another meaning, or take on another dimension. During a virtual exchange on-line, there is also a tension that occurs through not wanting to lose face or due to the illusion of being able to control one’s image and speech. This can be for example not wanting others to glimpse the untidier aspects of our own personal universe. This feeling of embarrassment and off-centre communication is not so much caused by the repetitive barking of a dog or the loud conversations

of other people who share the same accommodation, and who sometimes burst into the virtual space both visually and through sound. The tension in fact arises from the attempts of the person experiencing the interruption to deal with it, as they try to quickly re-establish effective communication, according to previously established shared rules specific to the context of “remote” conversation.

Insights into the work of architecture students, feedback on different ways and methods of learning

The major concerns of the architecture students in the context of the tutorials presented here focused on the conditions for disseminating certain ideas, visions and architectural models and on how certain urban planning approaches resist when confronted with changing lifestyles. Rereading the students’ work reveals their interest in understanding the role of utopian thought and the role of ideology in the development of contemporary metropolitan spaces. The students were particularly interested in the rhetoric of urban projects although the images that contribute to it were rarely the subject of critical analysis. We can also underline the role of the lessons as references, the semantic fields which were mobilized, the skills in argumentation and formulation that they developed, showing how easily the students were able to associate together the problems linked to the need for nature with those of urban development and deterioration.

In order to carry out a more detailed reading of the students’ work, we created an analysis table to be used as a tool enabling us to describe the results presented at the different stages of the course. Mobilising theories and methodologies from discourse analysis, we tried to answer the following questions: how did the students apprehend the taught content? How did they perceive and experience the situations where interaction was proposed?

The majority of the students’ work (nearly 80%) combined two approaches for the analysis of architectural and urban utopias. The first was the identification and schematisation of the principles which govern the unity of different architectural forms and which give structure to the territories. The second was the characterisation of human activities and how these are included in the environment. Thus, after questioning the context and the conditions of emergence of some of these utopias, students tend to develop a critical approach of these utopias notably through the logics at work that shape urban worlds.

About a third of the students’ work manages to highlight the strategic dilemmas facing the utopias of the twentieth century by inserting them into the urban planning debates of today. Four major concerns emerge: dealing with the density and living conditions of urban spaces; creating links between nature and architecture as an essential condition for urbanity; organising mobility and new ways of attaching people to their neighbourhood; how social and environmental inequalities are produced and become a factor in creating territorial discontinuities.

More than half of all the works focus on the first two elements of research. Therefore, we can ask ourselves what are the thought processes that the students go through in this case, and to what extent were they influenced by the situation of the pandemic? The referencing process which is initiated (choices, methods and types of reference) is of particular interest to us, because the process is developed freely by the students in connection with the teaching given. This process evokes “places of knowledge where reasoning is encoded, where ideas are formulated, where knowledge is fixed, where hypotheses are validated, where a thought is objectified” (Jacob, 2011).

Different paths of thought (“ideal-typical”, according to Max Weber, [1917] 1965) can be identified. However, with regard to the purpose of this paper, we will limit ourselves to mentioning a few examples relating to the first two concerns, which were commonly mentioned in the students’ work. The Garden City by Ebenezer Howard and Broadacre City by Frank Lloyd Wright were both among the references most often given. In both cases, the students highlighted the blurring of the distinction between town and country and the establishment of a new productive order based on shared ownership of the land. Social organization in communities is presented as being “concerned about resources and how to share them”. However, this comparison includes significant nuances: while Ebenezer Howard advocates social equality through a cooperative model, Frank Lloyd Wright proposes a certain form of individualism through property rights. Whilst Broadacre City takes into account the physical context into which it fits and is designed in an “organic” way, it is quite the opposite for the Garden City. On the morphological level, two types of preferred urban design emerge: Ebenezer Howard proposes a hierarchical urban system organised in small cities, but which is on the whole homogeneous, while Frank Lloyd Wright imagined

a binary system which combines on the one side, the city territories, and on the other, a concentration of macrostructures, mainly made up of high-rise buildings.

These two utopias appealed to a large number of students mainly due to the city-nature connections that they illustrate and the way in which these connections were then translated into projects (Letchworth Garden City, in Hertfordshire, founded in 1903; Radburn, in New Jersey planned at the end of the 1920s; Tapiola, built from 1951 on the outskirts of Helsinki, etc.). During the debates around these creations, the students questioned both the initial urban planning principle and how it would be renewed.

The comparison of these two utopias with more contemporary urban designs, such as, for example, the Vegetal City by Luc Schuiten, shifts the analysis towards the very conception of the urban environment. If architecture is “an orchestration of form according to nature” according to Frank Lloyd Wright, for Luc Schuiten comes from the living beings “which throughout its development is part of a set of balances necessary for our survival” (Schuiten, 2018). The experiments that Luc Schuiten carries out through drawing or through different creations nourish the students’ imaginations and lead them to formulate questions about biomorphic architecture, the use of biobased materials, and the search for means of self-sufficiency (food, energy, etc.) at different scales.

Echoing these urban creations, some students referred to recent architectural projects such as the Dano secondary school, in Burkina Faso, completed in 2007 by Francis Kere, or the METI primary school, in Dinajpur, Bangladesh, completed in the same year by Anna Heringer and Eike Rosvag. Others were interested in projects such as Stefano Boeri’s “Bosco Verticale” in Milan, completed in 2014, and which offers both an “exemplary” living environment and a response to the challenges of urban densification.

According to the students, the pandemic brought to light the limitations of several architectural and urban forms and typologies. Referring to their own experience of lockdown in the context of the COVID-19 health crisis, they point out the absence of a threshold between public and private spaces, between indoors and outdoors, and the impossibility of spontaneous interaction with the neighbourhood, etc., thus highlighting some of the paradoxes of living in a densely populated city. While some students continue to question the future

of metropolitan areas through the “trivialisation” of architectural designs resulting from an HQE approach (High Environmental Quality is a French certification system promoting sustainability in construction), others argue for the application of the same principles as for the Garden City with the idea of “bringing the countryside into the heart of the city, but also using techniques that conserve energy and guarantee the recycling of certain resources which have already been used”. The lexical field used during the evocation of such projects shows that around 25% of the students’ work repeatedly associates the future of the metropolises with the question of nature in the city, and with notions of “comfort” and individual and collective “well-being”.

These debates thus anchor the students’ questions in a broader semantic field, that of everyday utopias, leading them to express the need for other kinds of political action. Some discussions for example turned towards the generalisation of the creation of ecological districts. Some students put forward the hypothesis that urban fabrics would be densified by this type of new program and stress the importance of “good practices” contributing to their creation; others disagree, emphasising the technocentric design of such districts, “leaving little room for sensitive approaches which are sustainable in the long term”. It may be asked if this means that the “sustainable city” for most of these students is seen as a new utopia or if they imagine urban futures that conform to it only from an ideological point of view?

Linking certain “past” and more recent architectural and urban utopias is a way of developing the research process and has shown promise in terms of helping to familiarise students with the cognitive approaches specific to research in their field. It leads them to initiate pathways of critical reflection concerning the relationship between utopian discourse and the rhetoric of the project (or sometimes the project itself), as well as to question the role of the imagination in architectural and urban design. The students encountered several issues with the work that was carried out in the context of the pandemic, in particular the major difficulty of juggling with an understanding of utopian spatialities and at the same time the reinvention of their own daily living space.

Sometimes the correspondence between architectural and urban utopias is based on a formal and structural homology according to different socio-economic and cultural relationships. This led

to a growing abstraction in the analysis proposed by some of the students' work, as if the utopias in question were losing part of their substance and the links that were found between them suggested a kind of metalanguage, which was not without raising important epistemological problems. However, the debates on the future of metropolises which were initiated as a result allowed the contents taught in the course and daily life to meet, and the conversations thus benefited from the formative aspects of this experience.

Conclusion

In an unprecedented way, the context of the pandemic raised the question of how to renew educational practices in schools of architecture. The contents and objectives of the lessons which were re-developed and re-adjusted by the teaching staff resembled a challenge in which they had to resonate with the students in a virtual space and during a limited period, either of which might happen again. The conditions in which the lessons took place showed their limits insofar as the interactions in the learning process were of a very different nature, in the absence of any real physical presence, and involving different ways of sharing both verbally and non-verbally, compared to that which usually happens in the institutional places.

Workspaces were redesigned for uses which were restricted, alternating or deferred, both within schools of architecture and in domestic spaces. Infused with intimacy and undermined by the emergence of the digital tool and the imperatives of this reorganisation, homes thus became places of investigation into architectural forms and the practices that are played out in them. The dynamics of the mutual professor-student commitment to learning involved the construction of new benchmarks. Thus there was a tension between the need to reinvent new scientific methods, linked to themes which were appropriate to the context of a crisis, and the sometimes unequal possibilities that the students had to reappropriate them according to their different material and cognitive resources.

Entrusting architectural and urban utopias to students means both allowing them to change their outlook on the unfinished hypotheses of "past" and contemporary utopias and giving them the possibility of rethinking them from a critical distance. Such a posture seems necessary to us in order to renew architectural and urban forms for the future situations in which students will be required to work, in line with current concerns,

at the intersection of the environmental crisis and that of the pandemic. The recurrence of the themes relating to city-nature connections which the students proposed, encourages us to teach them about the possibilities of reconciling an urban world in transformation with that of the living beings.

Bibliography

- Barthes R., 1964, « Rhétorique de l'image », *Communications*, p. 40-51.
- Baudin G., 2001, « La mixité sociale, une utopie urbaine et urbanistique », *Revue du CREHU*, n°10, p. 13-23.
- Becker S.H., 2002, *Les ficelles du métier. Comment conduire sa recherche en sciences sociales*, La Découverte.
- Bergson H., [1941] 2007, *L'Évolution créatrice*, Paris, PUF
- Bloch E., [1964] 1977, *L'esprit de l'Utopie*, Paris, Gallimard.
- Certeau M., 1980, *L'Invention du quotidien t.I, Arts de faire*, Paris, Gallimard.
- Choay F. 2005, « L'utopie et le statut anthropologique de l'espace édifié », *Esprit*, p. 93-113.
- Choay F., 1980, *La règle et le modèle. Sur la théorie de l'architecture et de l'urbanisme*, Paris, Seuil.
- Choay F., 1965, *L'Urbanisme, utopies et réalités*, Paris, Seuil.
- Devisme L., Dumont M., Roy E., 2007, « Le jeu des "bonnes pratiques" dans les opérations urbaines, entre normes et fabrique locale », *Espaces et sociétés*, vol. 4, n°131, p. 15-31.
- Emelianoff C., 2007, « La ville durable : l'hypothèse d'un tournant urbanistique », *L'information géographique*, vol. 71, n°3, p. 48-65.
- Fishman R., 1980, *L'utopie urbaine au XXe siècle*, Mardaga.
- Foucault M., 1969, *L'archéologie du savoir*, Paris, Gallimard.
- Goffman E., 1974, *Les rites d'interaction*, Les Éditions de minuit.
- Genestier Ph., 2001, « Des projets en paroles et en images. La rhétorique du projet face à la crise du vouloir-politique », *Espaces et sociétés*, n°105-106, p. 101-127.
- Jacob C. (dir.), 2011, *Lieux de savoir: les mains de l'intellect*, t. 2, Paris, Albin Michel.
- Lefebvre H., 1968, *Le droit à la ville*, Paris, Éditions Anthropos.
- Latour B., 2006, *Changer de société. Refaire de la sociologie*, Paris, La Découverte.
- Morizot B., 2020, *Manières d'être vivant*, Paris, Actes sud.
- Morin E., 1986, *La méthode: 3. La connaissance de la connaissance*, Paris, Seuil.
- Magnaghi A., 2003, *Le projet local*, Mardaga.
- Mumford L., 1923, *The Story of Utopias. Ideal Commonwealths and Social Myths*, Londres, George G. Harrap & Co Ltd.
- Paquot T., 2018, *Utopie et utopistes*, Paris, La Découverte.
- Pérec G., 1989, *L'infra-ordinaire*, Paris, Seuil.
- Picon A., 2000, « Les utopies urbaines, entre crise et renouveau », *La Revue des deux mondes*, p. 110-117.
- Raynal F., Rieunier A., 1997, *Pédagogie : dictionnaire des concepts clés – apprentissage, formation, psychologie cognitive*, ESF éditeur.
- Ricoeur P., 1997, *L'idéologie et l'utopie*, Paris, Seuil.
- Ricoeur P., 1984, « L'idéologie et l'utopie : deux expressions de l'imaginaire social », *Autres Temps*, n°2, p. 53-64.
- Wallerstein I., 1998, *Utopistics: Or Historical Choices of the Twenty-First Century*, The New Press.
- Weber M., 1965, *Essais sur la théorie de la science*, Recueil d'articles publiés entre 1904 et 1917 traduits de l'Allemand et introduits par Julien Freund. Paris, Librairie Plon.



Fig.01 The town of Cherbourg-en-Cotentin surrounded by its territory [cartography by students from the ENSAPLV : Cléa Behna, Pacôme Brac, Lou Goiran, Lise Monnier]

Fig.02 Perimeter of the project to revitalise the territory (*Opération de revitalisation de territoire* or ORT) [for the town of Cherbourg-en-Cotentin, created by : Service SIG I © Cherbourg-en-Cotentin, May 2019]

Marie Chabrol, Anne Portnoï and Gabriella Trotta-Brambilla
Experimenting with a multi-partnership educational project in Cherbourg-en-Cotentin (in the department of la Manche, France)

Higher National School of Architecture of Normandy, France

As winner of the state-run program “*Action Cœur de Ville*”, the town of Cherbourg-en-Cotentin has made revitalising its town centre one of its priorities. The scheme proposes concrete measures to boost the sustainable revitalisation of the town centre, giving it a more attractive image. This includes focusing in particular on the redevelopment of old housing and shops, as well as on the conversion of emblematic buildings, a part of the town’s heritage, through innovative programs in the cultural and tertiary sectors. The project also aims to rethink the layout of public spaces, improving the accessibility of the town centre for all modes of transport and implementing an integrated system for water management.

In this context, the *Écoles Nationales Supérieures d’Architecture* (National Schools of Architecture) of Normandy and Paris-La Villette were invited to take part in a collaborative process, allowing the stakeholders of the territory to take a step back from the institutional approaches of their respective organisations and giving the students access to a different kind of expertise from that of the teachers-researchers who run the urban and architectural project workshops in the schools. The partnership, financed by three partners from the territory (the town of Cherbourg-en-Cotentin, the *Secrétariat Général pour les Affaires Régionales* (SGAR) and the *Établissement public foncier de Normandie* (EPFN)) was also an opportunity to initiate a dynamic relationship between the two architecture schools. This relationship developed over two years and involved different years in the Master’s degree program (semesters 7 and 9, and students working on their final year project) and different fields of study (“Architecture, Cities and Territories” and “Transform” at the ENSA Normandie, and “Living

in urban spaces” at the ENSA Paris-La Villette). The project workshops at school thus participated in the reflection on urbanisation carried out by local partners, within the framework of the national *Action Cœur de Ville* program, both by questioning how to improve the living conditions of inhabitants of medium-sized towns and also by analysing the specificities of the coastal town of Cherbourg-en-Cotentin, “a territory forged by its maritime history”. The town has a diversified and dynamic economy, but sometimes suffers from a poor image which thus reduces the attractiveness of the town centre, limiting the positive effects of a demographically and economically favourable situation. (Figure 01-02)

The objectives of the two school workshops were defined jointly by all the partners. These objectives can be listed as follows:

- make students aware of the current issues raised by the *Action Cœur de Ville* program, and also of the role of the different stakeholders in the transformation of the territories of medium-sized towns such as Cherbourg-en-Cotentin and, more broadly, of the issues surrounding sustainable urban development;
- reveal the qualities and potential of the territory of Cherbourg-en-Cotentin and more generally of medium-sized port towns;
- develop proposals for the modification and development of the town, also testing these proposals through projects located in the urban territory;
- communicate using the students’ contributions to help make all the inhabitants aware of the sustainable development challenges of their territory and initiating a debate on the future of the town of Cherbourg-en-Cotentin.

Thanks to this partnership, the academic workshops

were able to be developed outside of the school context. Despite the restrictions due to the Covid health crisis, some of the discussions took place in situ during a first day on site, when students and teachers were able to take advantage of visits and presentations organised by the town, accompanied by the town's deputy mayor, the directors of various technical departments from the town council, as well as representatives of the SGAR and the EPFN. (Figure 03) Throughout the semester, there were also discussions on-line (conferences on the

themes of the *Action Cœur de Ville* program or on issues surrounding urban projects, round tables with councillors and technicians from the town council), allowing the students to understand the development of urbanisation projects from a different angle, other than that of land surveying in the town or talking to the stakeholders and inhabitants. (Figures 04) The on-line discussions were also a way of staying connected with the town which is located three hours away from the two schools. Talks were also organized so that the



Fig.03 Conversation between Mr. Fagnen, the town council, the EPFN (*Établissement Public Foncier de Normandie*), the DDT (*Direction départementale des territoires*) and the students in the town hall meeting room [photo : Marie Chabrol]

students could discuss certain specific points of their projects with the people specifically in charge of the issues being addressed (such as housing, shops, heritage, etc.). The students also added to the key elements of knowledge on which they based their projects through the study of local urban planning documents, the use of digital tools (Google Earth and Street View, social networks) and brief visits on site, which they organised themselves.

Sanitary regulations made it impossible to set up the three-day workshop on site, initially scheduled for mid-semester. However, half-day round tables

were organised in order to allow discussions between the schools and the local stakeholders. The round tables, which took place on a specific video conference platform, are a revealing example of the development of new modes of interaction within the teaching framework.

Thanks to the enthusiasm and motivation of the town, but also because the meetings were held online and for a shorter duration than that initially planned, a lot of participants were able to meet on the same time slot. The students were able to present the outlines of their projects via videoconference to



Fig.04 Land surveying with the town council and the DDTM (*Direction départementale des territoires et de la mer*) [photo : Gabriella Trotta-Brambilla]

six councillors and about twenty technicians and employees from the various institutions involved in the project, as well as to teachers from the two schools.

Three sub-groups were created to make the discussions easier and to help respect the available time slots, meaning that each of the three round tables was associated with a major theme and / or type of project:

- Round table 1 - "Historic city centre", focusing mainly on heritage (history and local identities) and economic issues (economic activity, facilities, shops), but also on different ways of living in dense city centres (types of urban forms, how the ground level of buildings are used, different uses for public spaces);
- Round table 2 - "Sustainable mobility and transport", concerning in particular the general organisation of public transport, the development of the strategic area of the station and the unused railways, the place given to cars in the city;
- Round table 3 - "Nature in the city", focusing in particular on strategies for urban resilience (the

transformation and management of flood-prone areas) and on the quality of public spaces in terms of the environment and the landscape, both on the coast (including the evolution of the port and its facilities) as well as in the historic city centre.

The format of the students' presentations was rigorously established, encouraging them to clearly synthesise their remarks in 10 minutes, with the help of ten A4 presentation sheets which were shared on the screen (these documents were then sent to the different stakeholders). Among other things, this allowed:

- to make a maximum amount of time available for discussion, allowing the students to confront the reality on the ground and to ask any questions they had with regard to the strategies outlined at this intermediate stage of the workshops;
- to deepen students' knowledge relating to the field, both directly through conversation and subsequently through documents sent by the departments concerned, as well as enabling them to know the points of view of the various stakeholders involved;
- to more quickly establish strategies for spatial

intervention.

Through formulating a problem relating to the particular situation of the territory of Cherbourg-en-Cotentin and having to meet the objectives set by the partners, the students acquired knowledge in fields which are not always taught in architecture schools in France (for example, natural and industrial risks, the rehabilitation of old buildings, how rights-of-way work in a port). The project was also an opportunity for students to better understand public policies and how local government works, helping them to get a better grasp of the architect's field of action.

Working on this assignment was a great way for students to understand the real nature of urban projects, the challenges of urban development in a particular context, the need to take into account existing buildings and also the complex knowledge and different points of view of the various stakeholders in urban transformation projects. At the same time, the students were also encouraged to take a step back from the discourse of each stakeholder, helping them to shape an independent opinion concerning the development of a project, based on spatial configurations but where a lot is at stake from a strategic point of view. It is a question of gradually building a vision together, and of knowing how to defend this vision of the transformation of the urban spaces involved, even if these have not (yet) been identified as sectors for the project. The students'

work will thus help the town to develop potential ideas for the future of this territory where there are multiple challenges. (figure 05-06)

The experience of the first semester with the students was followed by the town launching a certain number of studies (imagining the rehabilitation of an old cinema and opening up the facilities towards the centre of the housing block, development of the outdoor spaces of a large housing area in the centre of town, etc.). Another expectation of the project partners was that of allowing the students' work to be shown, making this educational experience visible and sharing it with the inhabitants of the territory. A summary of the work has been published as a book and was the subject of an exhibition supported by a local art gallery. The book and videos will also be posted on the Action coeur de ville program website. More than a simple educational experience, this project exemplifies good practice with regard to the *Action Cœur de Ville* program, further testifying to the attractiveness of the town of Cherbourg-en-Cotentin.

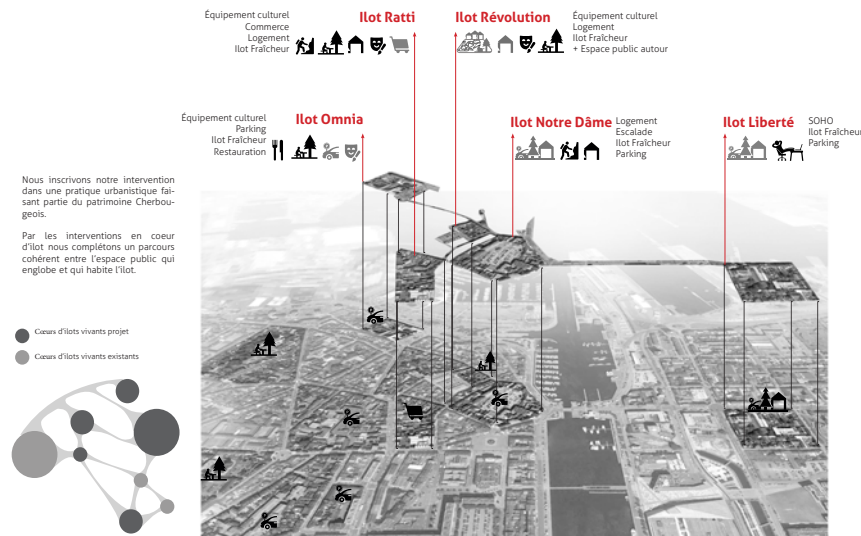


Fig.05 Network of housing blocks [Students from the ENSAPLV : Laurine Dacheux, Anabel Ginesta, Valentine Grandin, Annabelle Nantier, Carla Riccoboni]

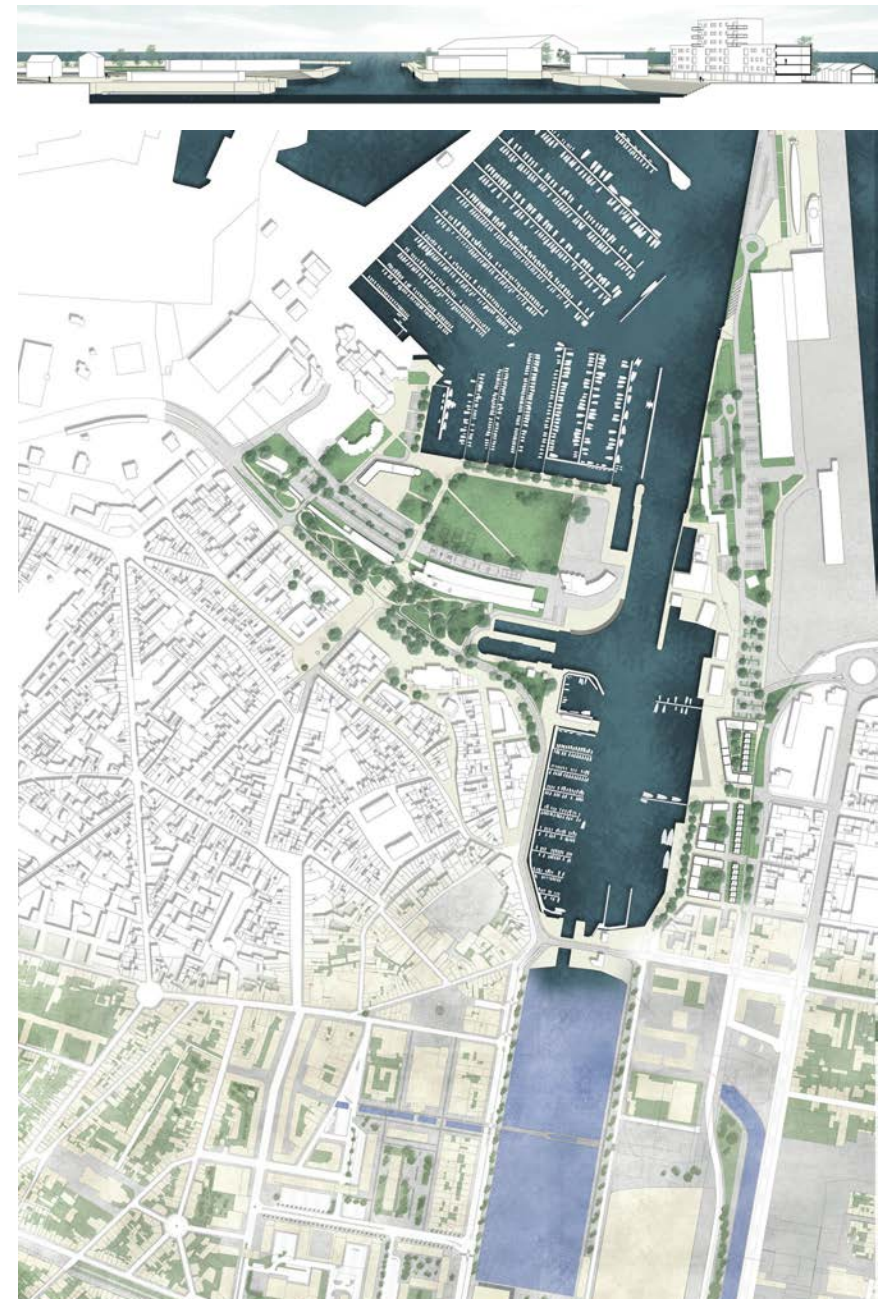
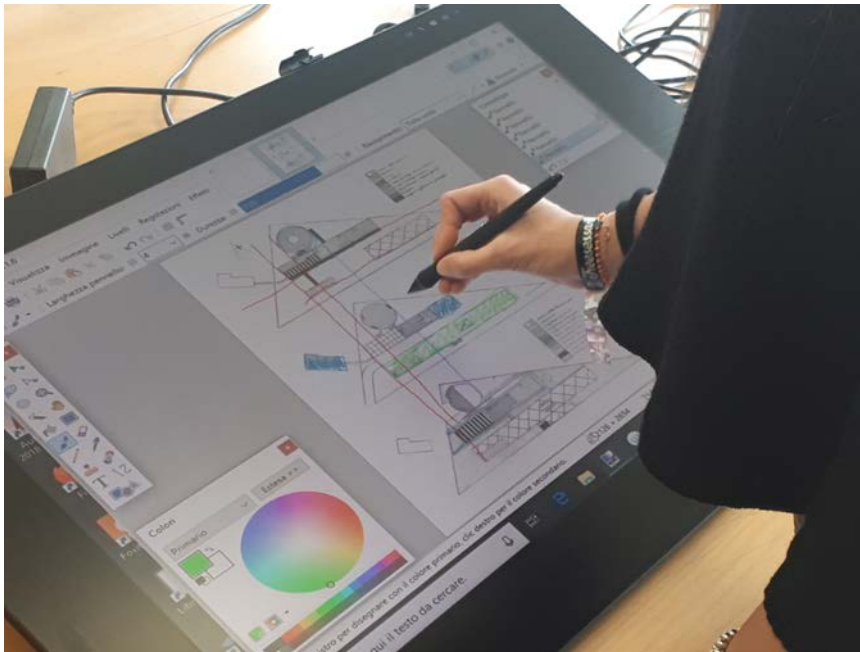


Fig.05 Map and guidebook « Autour des bassins portuaires » (Around the docks) [Students from the ENSAN: Timothé Bahu, Achraf Kherbouche, Mado Michot, Alexis Moello, Mahéva Puntis]

**State of Art: the experiences of
ArchéA's Network**

Lamberto Amistadi

ArchéA and the pandemic: the Cesena Campus experience*University of Bologna, Italy***Fig.01** Drawing on a digital table to share project informations between students and teachers

During the *ArchéA* program within the single-cycle Master's Degree Course in Architecture of the University of Bologna - Cesena Campus, different Teaching/Learning methods of architectural design were tested and verified: physical attendance, entirely remote, and blended. In addition to describing these different methods, this paper intends to reflect on their effectiveness in relation to the student's educational path, on the specificity of teaching architectural and urban design, and on the future perspectives of the use of new Information Communication Technologies (ICT). If the innovation concerns the methodology of teaching architecture, some issues related to specific Higher Education training in architecture must be mentioned.

Currently the training is divided between traditional ex-cathedra teaching (used for the theoretical and technical disciplines of architecture such as History, Restoration, Urban Planning, etc.) and design disciplines that are taught, according to different methodologies, inside the Design Workshops (Architectural Design, Urban Design). On the first group of disciplines (non-design) new technologies can be applied as already experimented in many other fields of knowledge through the adoption of specific e-learning platforms and through the adoption of Open Educational Resources (OER). Teaching/learning can also take place at a distance (Distance Learning).

The design disciplines represent the core of the student architect's training as they are able to synthesize the various acquired theoretical knowledge and translate it into architectural forms. These disciplines must necessarily be imparted through the workshops in which the teachers teach the techniques of the design project and

the architectural composition according to the methodology of the atelier through a continuous dialectical exchange between teacher and learner. The *ArchéA* project has implemented a Flexible Blended Teaching/Learning path (OER, MOOC, IPLs, i.e. the Architectural Design Workshop) designed specifically for the teaching of architecture. The transmissibility of architectural knowledge has always been based on a theoretical-analytical and a practical-experimental component: the innovative character of the *ArchéA* project concerns the integration between these two moments.

A strongly innovative character of the program concerns the use of ICT and digital tools to transmit and disseminate on the *ArchéA* platform the works of the Architectural Design Workshops (IPLs). Students have performed the design experience using digital tools such as digital pens and electronic tables and the workshop work has been transmitted in real time to the *ArchéA* platform through monitor sharing software (According to EU 'Opening up Education: Innovative teaching and learning for all through new Technologies and Open Educational Resources')

Moreover, being architecture itself a multidisciplinary knowledge, the *ArchéA* project can act as a testing ground to define a model of Good Practices regarding the interaction between technical-scientific disciplines and the field of creativity – as reported in the renewed European agenda with the transition from STEM to STE(A) M (according to la renewed EU agenda for higher education 2017).

The Teaching/Learning experience

From the very beginning the *ArchéA* project had envisaged using an experimental Teaching/

architectural design. This program entails the completion of two Intensive Programs for Learners: the architectural design workshops of Cesena and Aachen. The Cesena workshop was held at the location of the single-cycle Master's Degree Course between 23 and 30 November 2019 and included five participating schools of architecture, corresponding to the five member countries of the *ArchéA* partnership (Italy: Parma and Bologna/ Cesena; Germany; Poland; France), with a total of 10 professors and 30 students. Although on that occasion the students and teachers were present at the Cesena Campus, the practice of a remote visiting critic was experimented through the use of an electronic whiteboard and communication software. The Wacom Cintiq Pro 32 touch display was purchased with project funds and not only allowed sharing the images of the students' work on the screen, but also and above all allowed the visiting critic to intervene with his suggestions on the drawings with the use of a Wacom Pro Pen 2

high-quality, precision digital pen. Obviously, the visiting critic also had his own electronic whiteboard. Not having to foresee the simultaneous interaction of many people, the software used for this first phase was simply Skype for Business supplied to the professors from the University of Bologna.

Unfortunately, at the beginning of 2020, this first know-how of the *ArchéA* program was used to face the Covid-19 pandemic. The pandemic completely overturned the previous order of things and the experimentation of mixed and remote Teaching/ Learning methods of the architecture project, which had been held in the Cesena laboratory, became the new normal. Initially, the Degree Course in Cesena made the *ArchéA* experience its own: on the basis of its previous experience, the university financed the purchase of numerous other electronic blackboards, one for each course laboratory.

The architectural design laboratories are equipped with:

COMPUTER SICOMPUTER Q1.S2.16.05S	Productiva Quadro I3-8100T
Projector Panasonic	Proiettore LCD Panasonic PT-VMZ60EJ
Mixer AUDIO-TECHNICA	ATDM-0604
Monitor HANNSPREE	HT273HPB Monitor Touch LCD 27" con audio
WEBCAM	Logitech BRIO 4K Pro Webcam
Document camera	Ipevo 4k
Camera Panasonic	AW-HE38HKEJ
Microphone for conferences	Jabra Speak 710 (7710-309)
Monitor Touch Panasonic	TH-55CQ1W



Fig.02 A student during the online review by the digital table

Applying the national indications of the Ministry of Health, the university established the rules for mixed and distance teaching according to the stages of the pandemic.

Distance Learning

Students made the graphic drawings themselves on their PCs at home and submitted the drawings for critical review by the teacher via the Microsoft Teams university platform. The drawings were shared with the course professor and tutors, who viewed them on the screen of the electronic board or a graphic tablet, on which they intervened directly with corrections using graphic software (Adobe Photoshop, Paint, Paint 3D).

Mixed Teaching/Learning

Unlike with distance learning, a mixed Teaching/ Learning path involves having part of the students present in the classroom and part at home. This mixed situation makes teaching very tiring for the professor, as he must be able to divide his attention equally between the two groups of students. Those who follow the teaching from a distance participate in what happens in the classroom thanks to the use of a mobile camera and an environmental microphone.

The exchanges of information that take place with the students at home are instead shared through a video projector, which projects a shared PC screen on a screen hung in the classroom.

The second Intensive Program for Learners of the *ArchéA* project, the Architectural Design Workshop in Aachen, was held from 21 to 30 November 2020, i.e., in that second wave of the pandemic that did not allow transnational mobility but did allow gathering in small groups in research laboratories. Hence the activities were carried out dually: on the one hand, the internal organization of the individual national groups, on the other, the activities common to the different groups of the partnership. The activities related to the individual national groups were carried out in mixed mode, with part of the work carried out in the school's design laboratory and part carried out by each individual student at home, connected to each other via the Microsoft Teams university platform.

The workshop activities common to the transnational groups (presentations of materials related to the study-area, introductory conferences, participation of stakeholders, discussion seminars, visiting critics) were carried out remotely, again through Bologna University's MS Teams university

platform, to which guests were credited through temporary accounts.

In a further phase, during the various experiences in mixed Teaching/Learning during the pandemic period, the need arose to use a platform that would allow the work and the simultaneous exchange of graphic contents, i.e., the possibility of sharing corrections made to drawings in both directions in real time. It was solved using the combination of Zoom and Miro.

Final considerations

The didactics of architecture, or rather, the didactics of architectural design (which would be different for the history or technology of architecture or for the disciplines less related to the operational practice of design) has specific needs that can be equated, in some respects, to those of the artistic subjects taught in the Academies of Fine Arts. These aspects concern the so-called transmissibility of experience, that is, the transmissibility of those practices and behaviors that are more difficult to assimilate to scientific and logically determined knowledge. This type of teaching is conveyed through other channels, such as physiognomy: the transmissibility of the architectural experience makes use of the teacher's gestures in relation to the drawing tool and especially the architectural sketch.

Some characters, techniques, automatisms of architectural and urban composition are all the more evident in the way in which the teacher approaches the problem of from the graphic perspective, i.e., the sequence of signs that the hand traces on the drawing sheet (Focillon 1934, In Praise of Hands). This physiognomy of the hand, with the movements following one another in the description of the formal problem, together with the direct relationship between teacher and learner, are an unavoidable component in teaching architectural design. These are some of the explanations behind the resistance and difficulty in introducing distance learning for the discipline of architectural and urban composition. On the other hand, the introduction of more sophisticated communication tools and technologies, and above all the acquisition of greater familiarity with them, in part allows and suggests the possibility of overcoming these problems: digital pens more sensitive to the pressure of the hand and a system of webcams that film, transmit and share the aforementioned gestures.

Integration between Open Educational Resources (OER, MOOC) and practical activities (IPL) represents the crux of the *ArchéA* project and

involves the innovative use of Information Communication Technologies (ICT). Through ICT (both digital tools and software programmes) the work carried out during the ISP - ADWs is reported on the *ArchéA* platform, which is configured as a real Open Access interactive portal in which laboratory experiences and theoretical learning have been unified, transmitted, and disseminated at various levels.



Lamberto Amistadi - Associate Professor in architectural and urban Design at the DA of the University of Bologna. He is deputy director of the online magazine “FAMagazine”, devoted to research and projects concerning architecture and the city, and co-director of the series “TECA. Teorie della Composizione architettonica” (Clean). Along with Ildebrando Clemente, he founded and directs the series “SOUNDINGS: Theory and Architectural Openness” (Aión), which has included monographic volumes on John Hejduk and Aldo Rossi. He is author of numerous publications, including the books *Paesaggio come rappresentazione* (Clean, 2008), *La costruzione della città* (Il Poligrafo, 2012), *Architettura e Città* (with Enrico Prandi, FAEdizioni 2016).

In 2018 he won a position as Coordinator and Chief Science Officer in the European-level call of Erasmus+ Strategic Partnerships for Higher Education, entitled “*ArchéA* Architectural European Medium-Sized City Arrangement”.

Lamberto Amistadi, Enrico Prandi
**The ArchéA online Course on the themes of Urban Design.
A teaching/learning educational path**

*University of Bologna, Italy
University of Parma, Italy*

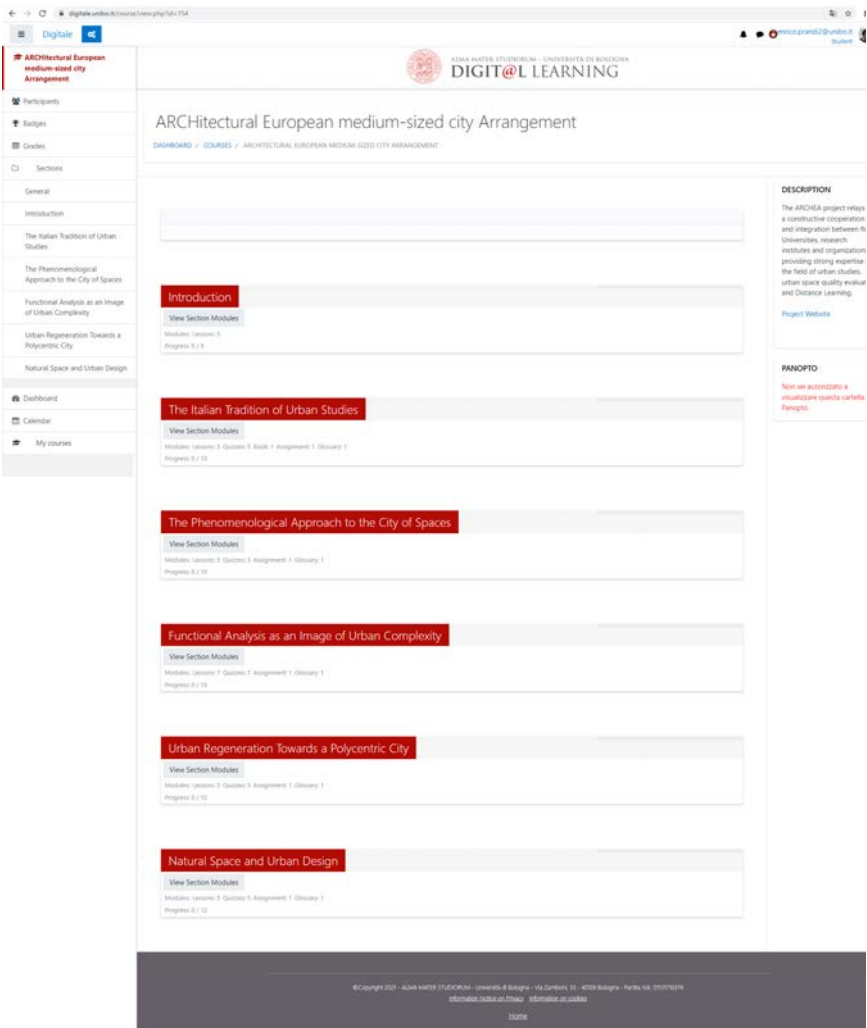


Fig. 01 Homepage of the ArchéA MOOC's website

Within the Archea research, an e-learning course was planned and implemented on the specific topics of investigation, or the Urban Design of the European medium-sized city.

In general, the term e-learning (in Italian apprendimento a distanza) means the use of multimedia technologies and the Internet to support the learning of users who cannot always be physically present in the place where the teacher is located (classroom). The term means both an electronic course and lessons delivered via videoconference, or a mixed set of tools. In general, the common characteristics of e-learning are: a) the distance of the users (in an environment that can also be hybrid or blended, or with a combination of e-learning and traditional classroom lessons); b) electronic support; c) dissemination on the net¹.

We are not interested in delving into the educational models of online teaching here as much as defining the reasons for the choices we made for the creation of the Archea online course.

A fundamental difference to be taken into consideration when talking about e-learning is that relating to the availability of courses: closed courses are defined as those defined by a training institution for groups of users regularly enrolled and distributed through platforms. Generally, these types of courses (which can also be hybrid) are led by teachers and / or tutors who define the times and relationships (between students and students and teachers). On the other hand, open courses are defined as those provided by a training institution to non-registered users (but registered on the platform and authenticated) who follow independently when attending the course (which is available 24/7). In this case the training is authenticated through self-correcting exercises or quizzes, which allow the

student to evaluate his understanding of the topics and monitor his progress.

In the panorama of e-learning at university level, a widely used tool is the MOOC, Massive Open Online Course, an “open and mass online course” (according to the definition of IATE ‘Interactive Terminology for Europe’), which has characteristics. They allow remote training of a large number of users, with different geographical origins, expectations and backgrounds.

The term MOOC is often used as a synonym for online course or even more generically as e-learning but it is good to keep in mind the differences.

The University of Colorado has defined the following differences between Mooc and Online courses². (Table 01 below)

MOOC: Content	Traditional Online Course: Content
<ul style="list-style-type: none"> - Content is accessible 24/7 - Media is open source - Learners are encouraged to share and contribute materials - Modules are 5 to 10 minutes - Content is edited when needed 	<ul style="list-style-type: none"> - Often material is only available one week at a time - Media is restricted by the university - Students search within an institution's library database - Modules are 45 to 60 - Content is edited by semester
MOOC: Delivery	Traditional Online Courses: Delivery
<ul style="list-style-type: none"> - Lectures are pre-recorded - All content is available from the start - Self-paced / customized learning path - Feedback is dependent on classmates - Course is open-ended with no due dates 	<ul style="list-style-type: none"> - Often include live lectures - Content is often locked until it is completed by the student - Group learns at the same pace / linear learning path - Feedback is dependent on teacher - Course is closed ended with due dates

Table 01 Differences between Mooc and Online courses by University of Colorado

MOOCs were born with the first MIT course “Connectivism and Content Knowledge” in 2008, the phenomenon grew exponentially between 2011 and 2012, (Menichetti, 2014)³.

Moocs fully embody the “open” culture, in the different meanings that the term acquires depending on the context (free, accessible to all, manageable independently, flexible, innovative in use, reusable, in the public domain, etc.).

According to Hill (2012)⁴, all MOOCs rank among the “fully online” courses, but the innovative scope of MOOCs does not exhaust its relevance in the context of online learning processes. The design and use methods can be very diversified.

From the earliest stages, MOOCs were designed to be anything but independent or opposed to face-to-face teaching.

One of the main objectives that moved large universities such as Stanford, Harvard or MIT to engage in the promotion of MOOCs was in fact to identify new online and face-to-face educational mix formulas that could cut costs, and therefore reduce taxes for students, which have now reached unsustainable levels in the USA (Denhar, 2013), without worsening the face-to-face teaching quality, indeed improving it. Technology is helping to revolutionize education.

In February 2014 Anant Agarwal, CEO of EdX, the non-profit and open-source platform founded by Harvard and the Massachusetts Institute of

Technology (MIT) which has 5 million students and provides 500 courses, during a TED Talk highlighted how the MOOCs make it possible to innovate traditional teaching methods and to obtain greater effectiveness of face-to-face teaching interventions. In the case of Inverted Learning, MOOCs can be important resources for individual study.

This direction has not been taken only by EdX: even its direct competitor, Coursera, a platform of Stanford University which has over 16 million students and provides 1,490 courses, shows that it cultivates with particular attention the Inverted Learning approach, as described within the “Flipped classroom field guide” (Adam et al., 2013) which reports concrete cases and indications for the development of courses using this method.

In addition to edX and Coursera, the third giant is Udacity, a Stanford University commercial start-up that offers paid online higher education courses for web developers, data analysts, mobile developers etc.

There are two major categories:

cMOOC, with a constructivist-connectivist slant (<http://www.connectivistmoocs.org/what-is-a-connectivist-mooc>), in which the participants have an active and predominant role over that of the teacher who becomes a facilitator;

xMOOC, of a donor-instructivist style, more widespread and implemented by large institutions

(mainly the major US universities such as Stanford, MIT, Harvard).

In recent years, Europe has also increased the number of MOOCs provided and today covers about 25% of the total courses available (SURF; http://openeducationeuropa.eu/en/european_scoreboard_moocs). A pan-European initiative, OpenupEd, has been active since mid-2013, in which several universities have been consortiumed with the support of the European Union.

Compared to those enrolled, only 5% -6% complete the training (which in absolute value however is equivalent to tens of thousands of students within a year). The very high dropout rate of MOOCs, compared to classroom training, is reported by critics as an indication of low appreciation of this training method. In reality, the behavior of the students is in line with the participation in other activities on the web: about 35% enroll only because they are attracted by free admission but then do not even connect to a lesson; others are operators in the sector who observe to acquire useful elements for planning but not to grapple with the objectives of the specific course; still others follow all the lessons but do not turn in their homework because they are not interested in certification.

Among the most disparate platforms available⁵, the choice through which to carry out the course fell on MOODLE, Modular Object-Oriented Dynamic Learning Environment [in Italian an environment for modular, dynamic, object-oriented learning] as it turned out to be in many countries Europeans including Italy the most widespread and used in the university environment⁶. Other tools widely used internationally are Coursera, EdX and EMMA.

Moodle is a learning management system (LMS) inspired by pedagogical constructionism, a theory according to which all learning would be facilitated by the production of tangible objects. Beyond this, Moodle, in addition to being Open Source, is a very flexible and adaptable environment to the different needs of university education.

Almost the only experience in Italy on Urban Design according to the list of MOOCs⁷ in the themes of Architecture, the ARCHEA course is part of a training offer limited to very few experiences mainly conducted at the Federico II University of Naples as part of the “Federica WebLearning”⁸. Other universities have also developed similar platforms such as POK⁹ of the Politecnico di Milano and BOOK¹⁰ of the University of Bologna.

The aim of the ARCHEA course is to innovate teaching in the field of architecture with an

independent but high-profile online course of content on the issues addressed by the strategic partnership.

The aim of the ARCHEA course is to innovate teaching in the field of architecture with an independent but high-profile online course of content on the issues addressed by the strategic partnership.

The course consists of 5 chapters (each of which was managed by the single university partner) plus a general introduction. The introduction consists of a general part on the project and 5 short videos by the scientific managers of the various universities (The 5 approaches); 3 Lectio Magistralis close the introduction: Urban Space and Theatrical Scene by Gino Malacarne, , Landscape at the Heart of Urban Projects by Jacqueline Osty, and City, Life, Architecture by Klaus Theo Brenner.

The five chapters follow: The Italian Tradition of Urban Studies (UniBo); The Phenomenological Approach to the City of Spaces (RWTH); Functional Analysis as an Image of Urban Complexity (POLSL); Urban Regeneration Towards a Polycentric City (UniPR); Natural Space and Urban Design (ENSAN).

Each Chapter provides a part of training and self-training according to the usual format of university teaching.

Each Chapter is an autonomous entity, it is composed of a set of Lessons (videos + written parts), an Assignment, a Book (optional), a Glossary and provides for the verification of the contents through quizzes (3 questions for each lesson). multiple choice.

The assessment of learning is given by the outcome of the quizzes (whose correction is automatic) plus the assessment of the Assignment by the teacher.

Each Chapter, if learning is sufficient, gives rise to 1 ECTS for a total of 5 ECTS if the entire course is passed.

Being an international course, the contents are available both in the language of origin of the research groups (Italian, German, Polish and French) and in English (the official language of the project) through deactivable subtitles.

It is a course that includes about 800 minutes of video lessons, many of which are integrated by parts directly written on the platform.

Since the course is compatible with the rules on university teaching, architecture students (of different levels and degrees, three-year master's or doctorate) will be able to attend (by registering) and download the certificate of the ECTS obtained

which can subsequently be validated by the office's supervisors of the various universities. The course could also become part of the different curricula of studies through the mechanism of the courses chosen by the different universities. The future goal is to make the course available also as a professional refresher for the various figures working in the field of urban design (Architects, Planners, Planners, etc.). The structure of the course is reported in its breakdown by parts.

The Italian Tradition of Urban Studies course (by University of Bologna) consists of the following lessons:

Lesson 1. The Beginnings: Rogers, Muratori, Samonà, Quaroni, by Lamberto Amistadi

Lesson 2. Venice as a Paradigm. The Value of the Void on the Urban Design, by Giovanni Marras

Lesson 3. The Architecture of the City, by Gino Malacarne (with a synthesis of the Aldo Rossi's book)

Lesson 4. Projects for the City: Gianugo Polesello, Luciano Semerani and Gigetta Tamaro, by Ildebrando Clemente

Lesson 5. The Urban Design, by Raffaella Neri

Total video time (90 min.)

The Phenomenological Approach to the City of Spaces course (by RWTH Aachen) consists of the following lessons:

Lesson I. Theoretical Foundations I.I. Concept of Space. Landmarks in a Theory of Architectural Space, by Uwe Schröder

Lesson I. Theoretical Foundations. I.II. Spatial Mapping. Landmarks in a History of Spatial Mapping, by Felix Mayer

Lesson II. The Red-Blue Plan as a Mapping. II.I. Method. The Approach of the Red-Blue Plan, by Timo Steinmann

Lesson II. The Red-Blue Plan as a Mapping. II.II. Instrument. The Legend of the Red-Blue Plan, by Timo Steinmann

Lesson III. The Red-Blue Plan as a Design Tool. III.I. Application Examples. The Red-Blue Plan in Design and Research, by Ilaria Maria Zedda

Lesson III. The Red-Blue Plan as a Design Tool. III. II. Experiment. Using the Red-Blue Plan in Design Process

Total video time (120 min.)

The Functional Analysis as an Image of Urban Complexity course (by Politecnica Slawska) consists of the following lessons:

Lesson 1. Public Space – Definition, Types, Importance, by Michał Stangel (Definitions and approach to public space of various disciplines; Types of public space; Importance for city structure and implications for urban design).

Lesson 2. Mapping of Space – Overview, by Tomasz Bradecki (History of mapping of spaces; Methods, themes, tools, examples; Experiments).

Lesson 3. Behavioral Maps of Urban Spaces, by Katarzyna Ujma-Wąsowicz & Krzysztof Kafka (Mapping of behavioral patterns (daily patterns); Mental maps)

Lesson 4. Urban Open Space Prototyping, by Michał Stangel (Urban space prototyping; Tactical urbanism; Placemaking and evaluation of public space)

Lesson 5. Large Scale Mapping, by Krzysztof Kafka (Overview of the method; Examples; Modes of use)

Lesson 6. Blue-Green Infrastructure, by Agata Twardoch (Role of blue and green infrastructure in the city; Relations between b/g infrastructure and the cities environment; Good examples)

Lesson 7. Contemporary Threats to Public Open Space, by Katarzyna Ujma-Wąsowicz (Privatization of open spaces; Availability constraints; Accessibility mapping as a part of protection against threats).

Total video time (155 min.)

The Urban Regeneration Towards a Polycentric City course (by University of Parma) consists of the following lessons:

Lesson 1. The Long-Term Method of The Urban Project in Italy and The Parma School, by Carlo Quintelli

Lesson 2. The European Medium-Sized City: The Characteristics of the Urban Form, by Marco Maretti

Lesson 3. Urban Regeneration Technique Through the Structured Densification of The Centrality System (TDSC), by Enrico Prandi

Lesson 4. Application Examples of The TDSC Methodology: The Project for Bologna, by Paolo Strina

Lesson 5. Application Examples of The TDSC Methodology: The Project for Aachen, by Giuseppe Verterame

Total video time (130 min.)

The Natural Space and Urban Design course (by ENSA, Rouen) consists of the following lessons:

Lesson 1. The Natural Space as a Structuring Material for the Urban Design. Part 1: The Search for an Urban System, by Valter Balducci

Lesson 2. The Natural Space as a Structuring Material for the Urban Design. Part 2: Nature as Substrate and Structure, by Valter Balducci

Lesson 3. The Natural Space as a Structuring Material for the Urban Design. Part 3: Natural Space

and Urban Transformation, by Valter Balducci

Lesson 4. Toward a More “Natural” City? by Jean-Marc Bichat (conference held at the ENSA de Normandie the March 7th, 2019).

Lesson 5. Uses of Mapping Territories and Urban Space, by Anne Portnoi

Total video time (145 min.)

Notes

¹ R. Maragliano, *Pedagogie dell'e-learning*, Bari, Laterza, 2004.

² <https://www.cu.edu/moocs-vs-online-courses>

³ Menichetti L., 2014, Open education e modelli di apprendimento flessibile, *Form@re*, Open Journal per la formazione in rete, [S.l.], v. 14, n. 1, p. 5-21, mar. 2014. ISSN 1825-7321 Disponibile all'indirizzo: <<http://www.fupress.net/index.php/formare/article/view/14750/13795>>.

⁴ Hill P. (2012), "Online Educational Delivery Models: A Descriptive View", *Educause Review* 85, November-December, 85-97.

⁵ <http://www.apprendimentocapovolto.it/le-piattaforme-mooc.html>

⁶ See also the document of the CRUI Foundation, MOOCs - MASSIVE OPEN ON-LINE COURSES: Prospettive e Opportunità per l'Università italiana. Available at https://moodle2.units.it/pluginfile.php/75836/mod_resource/content/1/MOOC_CRUI_VersioneFinale.pdf

⁷ <https://www.mooc-list.com/>

⁸ <https://www.federica.eu/>

⁹ <https://www.pok.polimi.it/>

¹⁰ <https://book.unibo.it/>



Lamberto Amistadi - Associate Professor in architectural and urban Design at the DA of the University of Bologna. He is deputy director of the online magazine "FAMagazine", devoted to research and projects concerning architecture and the city, and co-director of the series "TECA. Teorie della Composizione architettonica" (Clean). Along with Ildebrando Clemente, he founded and directs the series "SOUNDINGS: Theory and Architectural Openness" (Aión), which has included monographic volumes on John Hejduk and Aldo Rossi. He is author of numerous publications, including the books *Paesaggio come rappresentazione* (Clean, 2008), *La costruzione della città* (Il Poligrafo, 2012), *Architettura e Città* (with Enrico Prandi, FAEdizioni 2016).

In 2018 he won a position as Coordinator and Chief Science Officer in the European-level call of Erasmus+ Strategic Partnerships for Higher Education, entitled "*ArchéA* Architectural European Medium-Sized City Arrangement".



Enrico Prandi - (scientific coordinator of the Parma local unit), Associate Professor in Architectural and Urban Design, is departmental referent for Erasmus+ activities. Since 2010 he has been Erasmus + delegate for Architecture courses and in 2012 and 2013 he participated in the CCA project (LLP-Intensive Programme).

He is director of the Festival of Architecture, that organizes events (exhibitions, conferences, seminars, etc.) for the dissemination of architectural and urban culture. He is Director of the Open Access Scientific e-Journal FAMagazine. Research and Projects on Architecture and City (ISSN: 2039-0491, Scopus and WoS indexed, www.famagazine.it), Placement and Internationalisation experts, Urban Design Expert. His publications include: *L'architettura della città lineare* (FrancoAngeli, Milan 2016); "The Architectural Project in European Schools" (in *European City Architecture*, FAEdizioni, Parma 2012); *Mantova. Saggio sull'architettura* (FAEdizioni, Parma 2005).

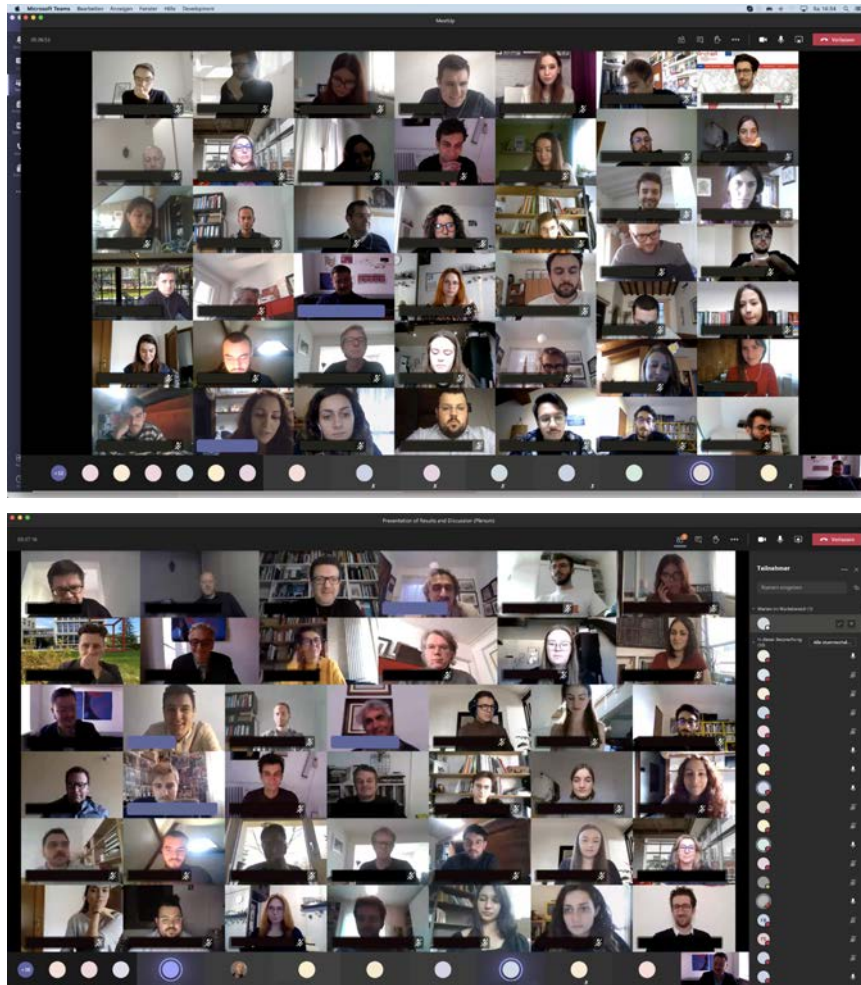


Fig.01 Workspace during the workshop in Cesena in November 2019

Fig.02 Final presentation of the design workshops results and projects in Cesena in November 2019

Timo Steinmann
Design in the Time of Corona
An Experience Report

RWTH Aachen, Germany

How does blended teaching and working function in formats that actually thrive on community, teamwork and lively exchange in person? This text addresses the insights gained from the organization and implementation of the *ArchéA* research project's design workshop in Aachen in November 2020.

I. The ArchéA Project

The *ArchéA* project—Architectural European Medium-Sized City Arrangement—is the product of a cooperation between five European universities that each pursue different research approaches to mapping urban space. As exemplary case studies, two medium-sized European cities—Aachen and Bologna—were mapped according to the different approaches of the participating partner universities. As the project progressed, the mapping methods were developed and refined further; a specially created online course will allow the findings to be disseminated to students of all participating universities in the future. By the same token, the tools and methods developed were tested as strategies for the development of new spatial solutions during the two international design workshops and presented, discussed, and thematically expanded in the context of several—originally planned as local—events. The *ArchéA* project thus incorporates various teaching and research formats, envisaged as a mixture of conventional and blended learning methods, even before COVID-19. The design workshops, however, which were conceived as teaching events, were intended to be in-person events, as meetings for the various partners and international students and to promote exchange between them.

II. Analog Methods—Before COVID-19

The first workshop within the *ArchéA* research project took place in Bologna and Cesena in November 2019. This was still in an analog format. The students and teachers of the partner institutions traveled to Bologna and Cesena. Guest speakers gave lectures at an introductory event at the university. Afterwards there was the possibility to visit the historical old town of Bologna as well as the project area to be planned. After the weekend in Bologna, the event moved to Cesena. There, the teams sat together at workbenches in the studio and were able to work together on the plans and on the model. A large working model was created in which all the designs could be inserted. Guest critics came for the final presentation, all the plans were printed out in large format and the designs were presented to a large group.

III. Digital Methods—During the Pandemic

The COVID-19 pandemic changed the premise of the event from the ground up. Due to the local situation in Germany, as well as for all partners involved, an in-person meeting in Aachen was not conceivable. The lockdown had Europe firmly in its grip, so a way needed to be found to hold a design workshop with about twenty-five students and teaching staff from five different European universities in a digital format, without foregoing the lively and productive atmosphere that such a week of design usually thrives on, including the lively exchange between students and the encounter between diverse attitudes and positions.

Since the use of video conferencing and various other established programs on the market had already been trialed in teaching and university communications since the beginning of the

pandemic in March 2020, the decision was made to arrange the event on the MS Teams platform. The idea was to handle all communication via this platform, as well as any data exchange, in order to create a small, self-contained cosmos over the duration of the one-week workshop in which all participants could meet and exchange ideas.

The platform included separate, exclusive group workspaces for the teams from the participating partner institutions, where the individual working groups could exchange ideas during their daily design work via video calls, in addition to sharing their findings and work samples with each other. Furthermore, there was a general accessible area that was intended as an open forum for exchange between the groups; the opening and closing events also took place here, as well as interim presentations of the designs.

In order to ensure a certain amount of lively exchange, a daily final meeting was scheduled.



Fig.03 Excitement and uncertainty at the beginning of the digital workshop “in Aachen” in November 2020

attend the event in Aachen in person.

The shift from the analog to the digital world was more problematic in the context of everyday workshop life and teamwork. While the individual groups of the partner universities managed to distribute the work within their teams and to work together to varying degrees—the partners from Bologna and Parma even had the opportunity to work together as a team in the same place; the other teams, in which the participants sat alone at home, had to rely entirely on digital communication and exchange—the communication among all participants was lethargic and not as originally hoped or planned.

In the obligatory daily meetings, it was already difficult to get the participants to even turn on their camera in order to participate visually in the conversation. Then, as soon as the cameras were active, the problem with digital formats in an event intended for lively exchange and direct



Fig.04 Cheerfulness at the final event of the digital workshop in November 2020

This was obligatory for all workshop participants and was intended to present the findings and results of the day. Interim designs were presented, and any identified problems or analyses of the planning area were discussed.

IV. Problems and Advantages of Digital Formats

The opening event on the first day took place digitally as a video conference with consecutive presentations by guest speakers and the organizers. For this event, the move to a digital format was unproblematic and posed no issues. The final event was held in the same way, where the digital format meant that guests could be added again at short notice. For both events, it was also now possible to invite guests who would not have been able to

collaboration became clear: like Saint Jerome in his study, all the participants were now isolated in their rooms and could not participate fully.

The willingness to join conversations, to participate, was almost non-existent, both among the students and the teachers; there was hardly any interaction, even after prompting.

Particularly noteworthy is the obvious:

Due to the distance and exclusive contact via video calls, there was no sense of community or togetherness. Neither a group dynamic nor interpersonal relationships via established acquaintances within the partner universities could develop—even getting to know each other digitally and forced conversations could not change this.

Conclusion

The event, “forced” into a digital format by the severe restrictions of the pandemic, showed that there are few alternatives to face-to-face exchange and work in design. However, a week of intensive work, such as this workshop, can certainly be complemented by digital formats, with a hybrid—partly digital, partly analog—approach leading to clear advantages. Working and designing itself function much better in person, while digital formats offer the possibility of making presentations and interim meetings, even with additional guests and the like, greatly simplified and possible without any logistical effort, even at short notice.

In summary, high-quality and profound results in terms of content are possible, scientific and academic exchange is feasible, but the additional benefits such meetings offer for participants, such as interpersonal social exchange and the broadening of horizons, remain almost completely behind the screens.



Timo Steinmann - he studied architecture in Aachen. He is currently working as a lecturer and researcher at the Department of Spatial Design at the faculty of Architecture, RWTH Aachen University.

Felix Mayer
Experiences with digital teaching formats during the COVID-19 pandemic at the Department of Spatial Design at the Faculty of Architecture, RWTH Aachen University, as illustrated by the course *Einführen in das Entwerfen* (Introduction to Design)

RWTH Aachen, Germany

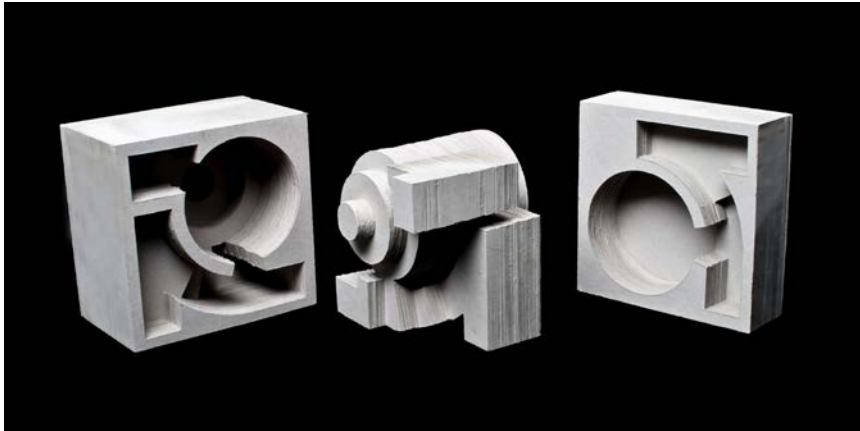


Fig.01 Student design project by Weizhen Guo, 2011. Photo: Department of Spatial Design, RWTH Aachen University

Introduction

With the arrival of the COVID-19 pandemic in Central Europe in March 2020, all of the courses offered by the Department of Spatial Design at the Faculty of Architecture, RWTH Aachen University up to that point immediately had to be converted into digital formats. How was this supposed to work in a discipline that is particularly characterized by analog work (drawings and models) and intensive exchange? The following text is a retrospective experience report describing the possibilities and limitations of digital formats in architectural education, using the course *Einführen in das Entwerfen* (Introduction to Design) as an example. After a brief outline of the module, both the analog teaching concept and its conversion to a digital teaching format during the COVID-19 pandemic are described. This is followed by a personal evaluation by the author about lessons learned and developments for the future of the course.

I. The *Entwerfen* (Design) Module

The Department of Spatial Design pays particular attention to space in its teaching and research: “Space must be simultaneously reestablished and enshrined in the essential determination of architecture as a superordinate category. Professor Uwe Schröder thus understands the teaching of architecture to be the teaching of space, which, by working through the ‘history of space,’ sets the focus of historical architectural observation firmly on space. A ‘theory of space’ would need to identify the peculiar spatiality of architecture in order for architectural design to ultimately become ‘spatial design.’”¹

The *Entwerfen* (Design) module is a practical introduction to design as a core discipline of

architecture for first-year students. Two practical exercises (designs) in the first semester and a project in the second semester constitute a systematic approach—with increasing complexity—to essential aspects of architectural theory and praxis. The objective of the course is to enable students to recognize fundamental architectural patterns, elements, spaces and typologies, as well as to analyze their regularities and apply them in their own designs. They are to formulate ideas and concepts independently and develop simple space-creating approaches. Through a building, students should be able to establish a relationship to the city and conceive a building in its context.

II. Analog Methodology (pre-pandemic)

The way project work was carried out in pre-pandemic times was through individual tutorials. Discussion took place at regular colloquia, as well as at the final public presentation in front of the group as a whole. This strengthened some key competencies in the students, such as presenting and peer criticism, as well as the ability to act, communicate, and interact independently. Analog drawings and models were used methodologically in the first year of study, especially in the first semester.

The students in each of the assigned groups worked primarily in their designated workrooms. The teachers were able to supervise the projects directly on site at each of the group tables. Working in the same room resulted in interesting discussions between teachers and students as well as among the students themselves. Collaborative learning with and from each other was an elementary component of the teaching concept in this configuration.

In order to strengthen the students’ understanding

of design and space, the practical exercises involved making models from plaster, concrete, and chipboard, in addition to creating analog drawings. In addition to learning individual skills, this also helped them to independently review their respective designs.

Alongside the work in the workroom, the curriculum was supplemented by walks through the city and field trips. This form of knowledge transfer in very concrete (spatial) situations translated what was theoretically discussed in the classroom to the built environment and vice versa.

III. Digital Methodology (during the pandemic)

With the arrival of the COVID-19 pandemic in Central Europe, the analog teaching format

described above also had to be converted to a digital format immediately. In order to be able to keep teaching activities running as smoothly as possible, we attempted to transfer the analog concept directly into a digital concept as quickly as possible. The overarching methodological and didactic questions were followed by very concrete challenges: Does each and every student have a computer? How can the students get to know each other and how do we comply with all aspects of examination and data protection regulations?

In all of these considerations, the fulfillment of the learning objectives described above (I.) were top priority, alongside protective health and safety measures. All course sessions—every supervision and colloquium—were therefore conducted via

video conference. Students prepared their designs and drawings from home and digitized them using a smartphone or scanner. Screen sharing enabled the drawings to be discussed and revised. Model building had to be discontinued due to the closure of the workshops, so axonometric representations replaced the students' three-dimensional work. The students were also asked to arrange individual drawings on digital boards so as not to neglect rehearsing a complete presentation including the layout.

Participants in the course are first-year students, most of whom come to Aachen from other cities to study. In order to promote exchange among them, smaller preliminary exercises in group settings were also carried out in the digital format as often as possible. As part of this, the students would exchange ideas in breakout sessions before each sharing their findings with the group as a whole. Overall, all sessions were aimed to be as interactive as possible, despite the lockdown.

IV. Limitations of Digital Teaching Formats

After a year and a half of dealing with digital teaching formats as part of the course *Einführen in das Entwerfen* (Introduction to Design), it can be stated that it is practically possible to teach the

fundamental aspects of design in a digital format. The learning objectives were still able to be achieved, even during the pandemic, and student outcomes were of a high standard. Although implementable, however, the opportunities provided by digital formats are significantly limited compared to analog teaching formats. There are five areas where this becomes particularly evident:

First, the limited methodological work when designing. One of the most important methods for teaching space and spatial design in this course is the model. This helps students gain a better understanding of space. Drawings, such as axonometric representations, can only replace this to a limited extent.

Second, the limited building of relationships. Digital collaboration creates a different form of contact. Teachers appear to students as much more abstract people who are distant or possibly unapproachable. They can only be reached via (video) telephone or email. The first-year students were lacking a place to interact with the teaching body, or more precisely, their physical presence, which would enable them to get to know them fully. In addition to this, the students were lacking a place of learning—their faculty. This weakened their identification with



Fig. 02 Excursion with students to the Saint Benedict Abbey, Vaals, 2015. Photo: Oliver Wenz, Department of Spatial Design, RWTH Aachen University.

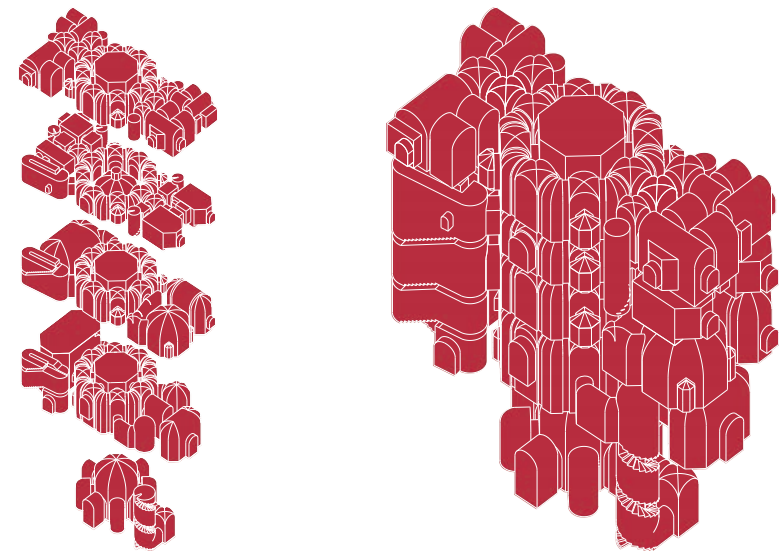


Fig. 03 Student design project by Ivo Mehring, 2020. Axonometric drawing of the inner space.

their own university.

Third, the limited opportunities for getting to know each other. As described above, working with each other in groups, as well as mutual exchange and support, is of elementary importance in the study of architecture. Getting to know each other properly usually takes place through intense collaborative work on a project, or individually after shared classes. Video formats cannot ensure this form of togetherness and community.

Fourth, the limited non-verbal communication. Despite the small videos of the other people in the video call, neither their overall body language nor their exact facial expression can be recognized. Have the students understood the content? Have they already been aware of the point for a long time? Did the lecture arouse their interest? These are all issues that are especially crucial for teachers in analog tutoring situations and which do not work well practically in digital formats. In addition to this, discussion sessions are much less spontaneous in digital formats. Due to the lack of simple gestures, permanent intense moderation is needed. Spontaneous exchange in small groups is limited due to the technology.

Fifth, the abandonment of field trips. In order to sharpen students' understanding of dimensions, proportion, materiality, space, and so on—in other words, architecture as a whole—regular field trips and walks through the city were offered in the analog teaching format. During the pandemic, no comparable solution could be found.

Conclusion

The restrictions on teaching during the COVID-19 pandemic catapulted architectural education into a digital age in a way many previously thought was unfeasible. Despite the aforementioned limitations, students were able to safely and remotely continue their studies within the standard period of study. The need to transform the entire course into a digital format in one fell swoop during the pandemic should therefore be seen as a major experiment. This needs to be evaluated and opportunities for the future identified.

So, what can we take away for the future of teaching, in what we hope will be a post-pandemic era? Technological tools such as video calling, digital learning spaces and virtual concept boards are becoming more sophisticated and intuitive all the time. We should try to incorporate these into our courses in the future, where possible. Sharing additional available material, planning events, and

documenting results can all function excellently through these platforms. Larger events, lectures, and conferences should continue to be available as streams to allow interested audiences from other faculties to access them.

The experiences from the course *Einführen in das Entwerfen* (Introduction to Design) have shown that in emergency situations it is possible to run the course digitally, although the significant limitations, especially for first-year students, have become clear. Design, and the teaching of design in particular, thrives on an approach that makes use of analog drawings and building models, as well as intensive exchange with the students. The atmosphere of working in community with other students cannot be replaced virtually, nor can the atmosphere of an analog final presentation with all the drawings and models displayed exhibition-style. On the methodological level, areas were identified that cannot be replaced digitally, such as model building and field trips together. Above all, the importance of the interpersonal level is not to be underestimated. This applies to contact with students and particularly to contact between students.

Notes

¹ Schröder, Uwe: "Raumlehre," in: *der architekt*, 3/2008, p. 69



Felix Mayer - he studied architecture in Konstanz, Sevilla and Aachen. He is currently working as a teaching assistant and researcher at the Department of Spatial Design at the Faculty of Architecture, RWTH Aachen University.

Michał Stangel
**Blended training activities in on-line and on-site exploration
 of the urban structures**

Silesian University of Technology, Poland

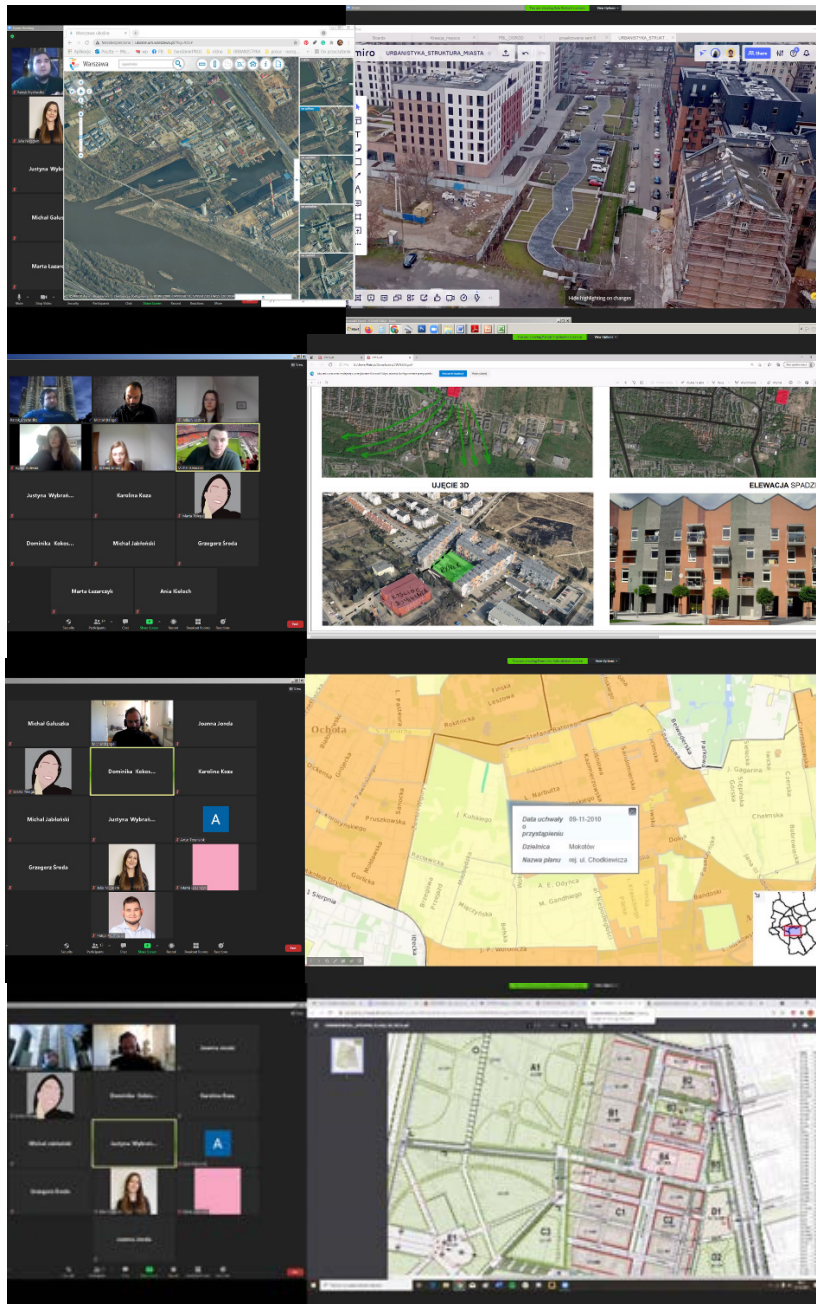


Fig.01 Online ZOOM discussions about the structure of selected contemporary urban developments - seamless blending of various imaging tools: online maps, aerial images, moodboards, own sketchy analyses, municipal land use geo-portals and master-planning documents

Abstract

Training activities at the Architecture Faculty of Silesian University of Technology have shown the success of extending educational forms beyond traditional classes, and have incorporated interactive and immersive methods, such as workshops, site trips, Project Based Learning, interdisciplinary seminars, etc. Such practices resulted in better engagement from the students and generally improvement of the quality educational experiences. However, the lock-down and imposing of distant learning since March 2020 have largely limited the innovative teaching forms and limited them to online interaction through various communication platforms. While the university seems to have adapted very well to the new situation in terms of lectures, design studios and drawing consultations; it proved quite challenging to realize engaging seminars and vivid discussions.

The paper presents authors search and experiments with methods of extending beyond basic content to fruitful discussions and evoking interest and enthusiasm in the students, to find immersive educational methods in the new situation. These included testing various available online tools for communication, teamwork and urban analyses; deliberately blending online communication with traditional paper sketching and note taking; online workshops with invited guest speakers; as well as mixing online classes with real-life on-site activities and analyses performed by the students. An opposite situation was also tested, where the teacher was located in the urban space, lecturing and recording clips for the *ArchéA* online course. The evaluation of the course has shown that the students have highly appreciated the created training milieu, which resulted in their commitment, activeness, eagerness

to both sharing own experiences and teamwork, and generally evoked the desired sensitivity and interest in urbanity and understanding the urban structures.

Teaching architecture and urban design at the Architecture Faculty of Silesian University of Technology has been incorporating interactive and immersive methods, such as workshops, field trips, Project Based Learning, design studios with realistic clients, competitions, interdisciplinary work, guest presentations, etc. Experiences has shown the success of extending educational forms beyond traditional classes, which resulted in better engagement from the students, satisfaction for teachers, innovative outcomes with research potential and generally improvement of the quality educational experiences (Stangel, Witeczek, 2015). The outbreak of the pandemics and the lockdown introduced in Poland in March 2020 resulted in closing the faculty for the students for three semesters and switching to distant learning. It seemed that after a short period of anxiety, the university has adapted surprisingly well to the new situation. Students were happy with the convenience of learning from home and saving of time for travel and classes. It turned out that distant learning was quite efficient in both lectures (live and prerecorded) and project consultations. However, what was most challenging were the seminars and discussions, and maintaining an intellectually stimulating, immersive and creative learning environment in the distant learning conditions.

Immersive, flexible training activities - theoretical framework

Education of urban designers and planners requires an understanding of complex, interdisciplinary urban issues and mechanisms of development, as well as a range of soft capabilities such as team work, negotiating and continuous learning. A successful process of education shall allow gaining knowledge, competencies and practical skills. Gordon Lindsay (2009) describes three necessary elements of such learning experience as:

- *Immersion* – students are immersed in a project whose “scope and complexity is greater than the capacity of the individual student”. In other words the projects are too complex for one student to be able to complete them on their own.
- *Exemplarity* – the work and processes related to the project is a good example of what is found in their profession.
- *Social contract* – while being accountable for their own learning, students also share responsibility within the team and learn from each other in the process.

The described search for meaningful educational

experiences recall the psychological theory flow (Csikszentmihalyi, 1990). It describes the conditions for optimal experience and efficient activity, which simultaneously gives satisfaction (in various aspects of life, including work and education). Csikszentmihályi argues, that optimal effects and satisfaction results from performing realistic, concrete tasks, which have right defined goals, where feedback is available, and which give the possibility of using the possessed skills. It seems that this principles applied to urban design education, can result in higher quality, efficiency, motivation and other positive outcomes of the architects education process.

On entry levels of education it is important to teach not just design basics, but to give some experience and understanding of the complex, interdisciplinary mechanisms that form urban space. For more advanced students, working in teams and undertaking design challenges, in an environment similar to real professional life gives best results. In general, in order to evoke students engagement and interest in urbanism, it seems essential to provide meaningful and engaging educational experiences.

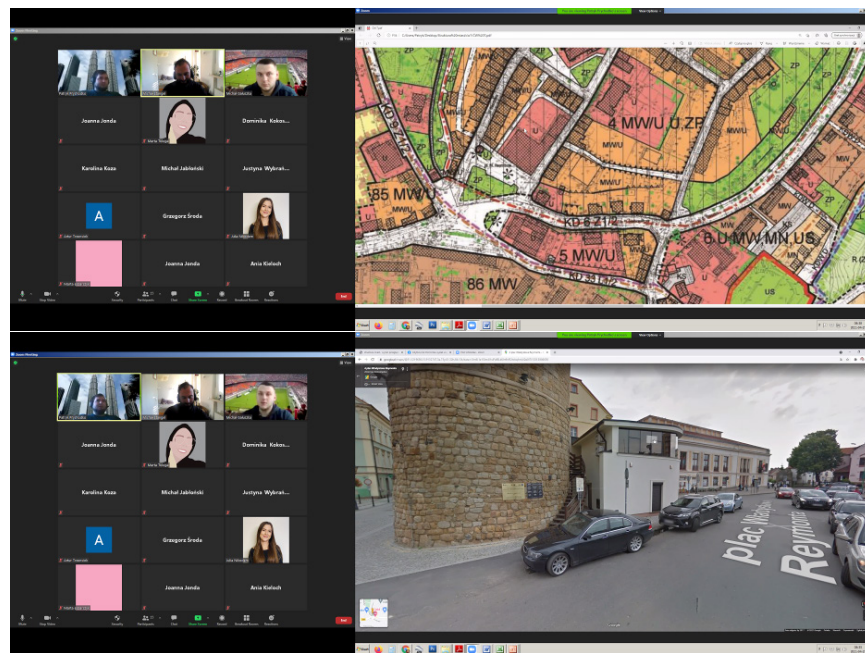


Fig.02 Seamless comparison of planning situation and built reality, which led to some unexpected discoveries of evident clashes and planning mistakes

Emphasizing real-live urban analysis and evaluation in urban design and planning subjects at the Faculty of Architecture in Gliwice has been effective in evoking and strengthening students' sensitivity to urban space. For several students the methods resulted in a growing interest of urban design issues, and pursuing urban design specialization within their elective courses and master thesis topic. Students who successfully accomplished the entry projects and tasks were encouraged to continue with realistic design challenges at the design studios, competitions, workshops, diploma projects etc. Upon completion they were offered the possibility to conceptualize their work in research papers, as well as to apply for grants for further research (Stangel, Szóstek, 2015).

Understanding the urban structure

The course of “Urban structure” gives a comprehensive introduction to various aspects of cities. The course has been run by professor Zbigniew Kaminski, who has encouraged teachers to test various methods and exercises with particular students groups. The basic exercises involve analyzing and critique of various systems of a given city, such as land use, urban form, transportation, nature or public spaces. Discussions with students shall give them awareness of the interdisciplinary issues beyond spatial, such as economics, demography, politics etc.

The focus is on mid-size Polish cities chosen by the students. However, the students are encouraged to also refer to distinct international examples of cities, particularly those they experienced first-hand, when travelling. Before the pandemics and lock-down, several issues were experienced on-site in locations in the centre of Gliwice. For example, urban transportation was experienced by site visits,

on site analyses of streets and crossroads, as well as a visit to municipal Traffic Management System and Surveillance System, which gave a new perspective on how the street grid works and is managed. The relation of urban real-estate and build form infill was concretized in a site visits of current developments and discussion with a real estate developer. In this way the value of downtown location was not just an abstract idea, but a true business opportunity. The site visits proved to be a valuable experience for the students, who acknowledged and appreciated the practical hands-on experience.

Within the lock-down and the pandemic situation, the university has worked out procedures for distant teaching and supplied teachers and students with licenses for MS Teams and ZOOM. These, together with a previously operating Moodle “distant learning platform” were to be the basic tools for distant learning. As a basic tool for communication ZOOM enabled lectures, discussions, presentations as well as group work in break-out rooms. As students were online and using their own computers, it allowed them to access all sort of online resources such as: online maps, aerial images, Pinterest moodboards, own sketchy analyses, municipal land use geoportals and master-planning documents, as well as an endless amount of documents and websites. The students have shown a great flexibility and skills in seamless blending these various sources in their presentations and discussions.

Flexible navigation between various sources of information stimulated discussions and exploration and allowed looking at the same spatial issues at different perspectives.

Some of the interesting discoveries were evident clashes between planning situation and built reality, such as in the city of Złotoryja, when a plan description error allowed for building a modern

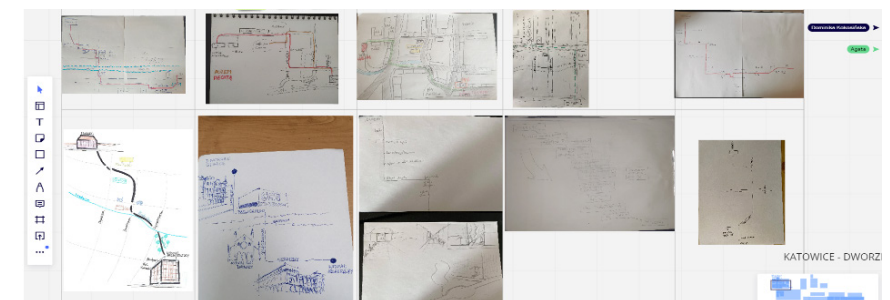


Fig.03 Combining traditional sketches with online presentations and discussions

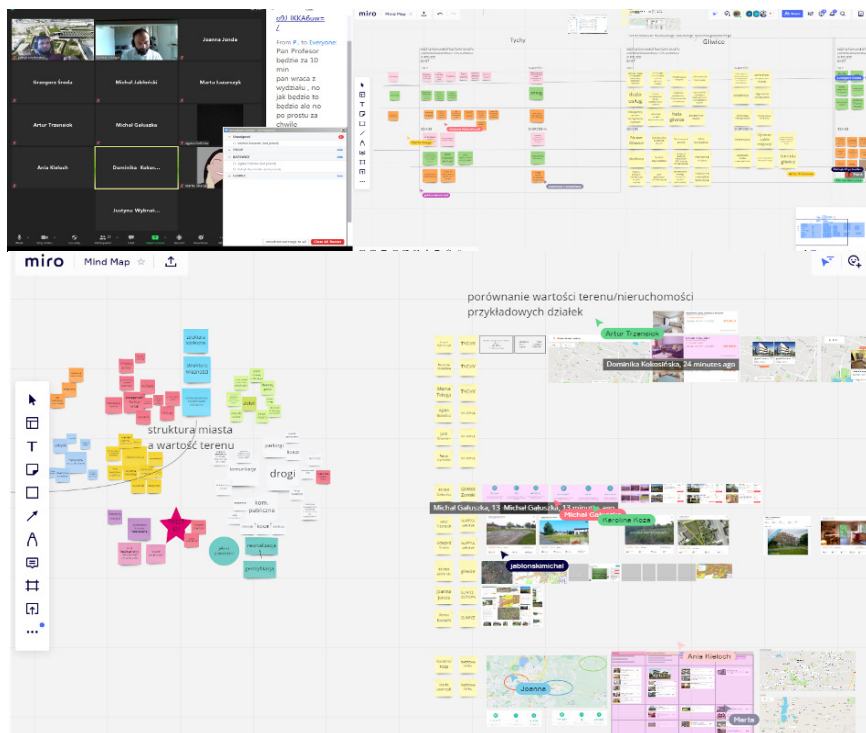


Fig.04 Brainstorming, sticky notes and visual moderation using Miro. Blending ZOOM transmission with the feeling of sticky notes visual moderation

building attached to a listed historic monument. Within the proliferation of available online techniques, however, some methods were tested to deliberately constrain the media and let the students focus on their spatial experiences and memories. Such was the classic exercise based on Kevin Lynch's *The Image of the City* (1960), when the students were asked to draw from memory, not looking at online maps, a commonly frequented way from the railway station in Gliwice to the architecture faculty. The sketches were then put together and compared and discussed, leading to the introduction of Kevin Lynch's renowned typology of paths, edges, districts, nodes and landmarks. One of the challenges of online teaching was to perform team workshops and brainstorming sessions, which in personal meetings would normally involve direct interaction with sticky notes and flipcharts and enable instant visual moderation. A very helpful tool came in form of Miro - an online collaborative whiteboard platform. Blending ZOOM with Miro in training actually

enabled an online equivalent of visual moderation. To encourage students to tap into their direct experiences and look at their urban surroundings in new ways there were exercises in which students were asked to go outside and perform specific tasks near their home. In the first exercise, students, based on Kevin Lynch's earlier discussion of pattern language, explored similarities and differences in patterns of space such as street, frontage, dominant, entrance zone, etc. Students performed photographic analyses in the field, which they then presented to the group in front of the computer. A similar exercise involved analyzing selected public spaces along with their surroundings using the Place Game method, by Project for Public Spaces (2000). This time the students worked on printed forms in the field and directly transmitted the results of their work and commentary on the places via cell phones. Some students managed to meet and work in pairs or threes. The direct transmission and sharing of experiences allowed students to relate their knowledge to their direct

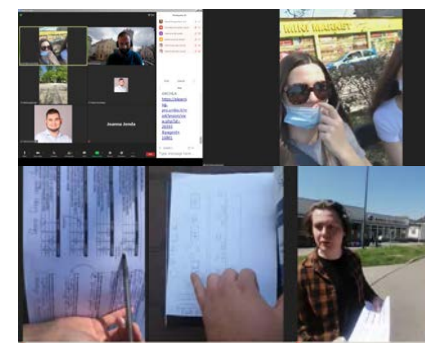


Fig.05 Site analyses blending phone transmissions with paper surveys and sketches

experience and brought freshness and enthusiasm to the class.

An opposite situation was also tested, where the teacher was located in the urban space, lecturing and recording clips for the *ArchéA* online course. Again, the urbanist perspective in the commentary to the pandemic images of places certainly known to the students, in the centre of Gliwice, allowed blending personal experiences with professional knowledge and perspective.

The course was supplemented with guest presentations and workshops with invited experts from external institutions. In the discussed course it

was three guests sessions. Agnieszka Czachowska from Sendzimir Foundation, a leading Polish environmental think-tank presented the issues of urban green and blue infrastructure. The students were applying the insights directly into their analyzed sites and presenting possible applications, with experts feedback.

Other guest speakers were Jakub Świdziński from Medusa Group, a large architectural firm, presenting new housing districts and Michał Adamczyk from the Municipal office of Ruda Śląska, responsible for urban regeneration. With the loosening of the pandemic restrictions it was later actually possible to organize real on-site visits to both Ruda Śląska regenerated brownfield sites and Medusas "First District" - a housing estate on former coal mine site in Katowice.

Evaluation and discussion

The course of the blended training and its components was evaluated by the students in a final survey based on the "starfish retrospective" method. Students were asked to summarize their experiences answering five questions: what they liked, what they didn't like and would recommend to abandon, what could be improved, what could be added; and finally: what were the personal take-aways from the course. Representative answers are listed below:

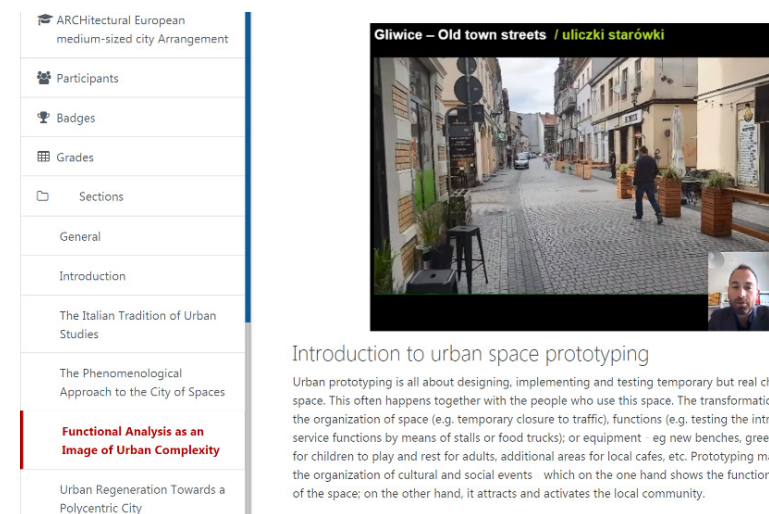


Fig.06 Video clips with commentary prerecorded on site used within the *ArchéA* online course ARCHitectural European medium-sized city Arrangement, section Functional Analysis as an Image of Urban Complexity, lesson 4 - Urban space prototyping. <https://digitale.unibo.it/course/view.php?id=154§ion=4>

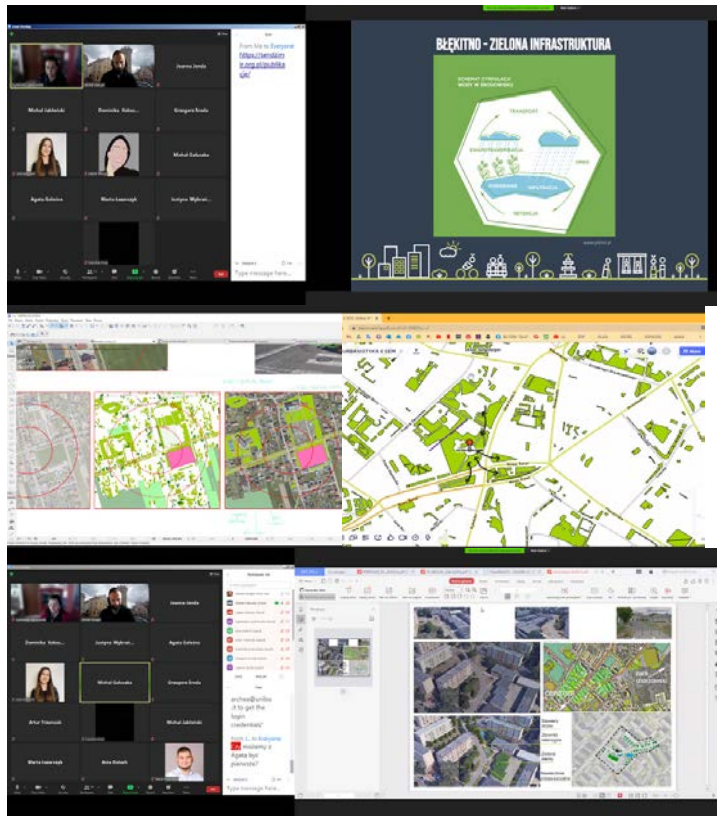


Fig.07 Guest presentation and online workshop about urban green and blue infrastructure. Agnieszka Czachowska, Sendzimir Foundation

We liked:

- The opportunity to gain urban planning knowledge and practical experience;
- Discussing various examples of spaces and projects as an introduction to the class;
- The conversations created a good atmosphere during the classes;
- Team work;
- Partner approach, discussions instead of assignments;
- nFocusing on specific tasks without spending a too much time on graphic design;
- Analysis of our own cities and neighborhoods; looking at the spaces around us with "fresh eyes";
- Workshop approach to classes;

- Working in small groups on a given topic, but discussing it together in a larger group;
- Various forms of classes;
- Possibility of analysis and comparing of various cities
- Learning through conversation.

We didn't like, would abandon

- Lack of contact classes;
- That I did not read everything that was recommended

We would add o/improve:

- If we could present our work in the same classes as we prepare it;
- A common group, for uploading materials/ topics that intrigued us, interested us;

- Live workshops;
- Even more field trips;
- A proposal to add as a "fixed point" field activities for the entire course;
- Even more classes with invited guests;
- Not enough books I've read to describe how much I enjoyed it.

What are your personal take-aways from the course?

- drawing attention to aspects that we had not noticed before - the work of officials, the actions taken and their importance, involvement
- paying attention not only to beautiful architecture, but also to your immediate surroundings and urban conditions
- paying attention to the city around us - public spaces, greenery, buildings, landmarks
- ability to search for materials
- view on the real work and tasks of urban planners
- sharing the teachers experience; showing own work and projects develop live
- time to stop, to be aware of different things in the city
- going out into the field, the opportunity to see the city live

Conclusions and recommendations for blended, flexible training activity and practices

Education of architects in understanding the complexities and potential of urban structure requires not only knowledge and skills, but also - or perhaps, most of all - a sensitivity towards several aspects of space. The course Urban Structure was aimed to inspire, develop and nourish such sensitivity, by a variety of means - including several team work assignments and field trips and exercises. Switching to distant learning in the pandemic realities brought a thread, that the course will be severely limited. The author was seeking to find equivalent forms in blended training, which would be beneficial for the students.

It turned out that the situation when students, rather than in class, meet on-line, being in front of their computers, actually brought about several possibilities. The students were at their homes, but could go out individually and perform several assignments in their neighborhoods. Also the teacher could at times go out and record real-live urban space situations. Online tools enabled, despite the difficulties, to maintain a creative, teamwork atmosphere of curiosity, reaching to own experiences and stimulating sensitivity and empathy.



Fig.08 Site visit with social distancing - "First District" in Katowice with Jakub Świdziński, MedusaGroup

Acknowledgements

This article was based on the blended training experience within the Urban Structure studio with the group of students, including: Agata Goleńska, Patryk Prychodko, Michał Gałuszka, Joanna Jonda, Anna Kieloch, Julia Nikodem, Grzegorz Środa, Artur Trzensiok, Michał Jabłoński, Karolina Koza, Marta Łazarczyk, Justyna Wybrańczyk, Dominika Kokosińska, Marta Telega. The author would like to acknowledge their commitment and input within the course, as well as valuable insights and conclusions in the studio evaluation. The author would also like to thank the quest speakers invited to the course: Agnieszka Czachowska, Sendzimir Foundation; Jakub Świdziński, MedusaGroup; Michał Adamczyk, Municipal office of Ruda Śląska.

Bibliography:

- CSIKSZENTMIHALYI, M. (1990) – *Flow: The Psychology of Optimal Experience*. New York, Harper and Row.
- LINDSAY G., H. BLYT (2009) – *Defining, profiling and accommodating Learning Diversity in an International PBL-Environment*, Active Learning for Engineering Education (2009).
- LYNCH K. (1960) – *The Image of the City*. Cambridge MA: MIT Press.
- STANGEL, M., SZÓSTEK A. (2015) – *Empowering citizens through participatory design: a case study of Mstów, Poland*. ACEE Archit. Civ. Eng. Environ. vol. 9 no. 1, 48-58.
- STANGEL, M., WITECZEK A. (2015) – *Design thinking and role-playing in education on brownfields regeneration. Experiences from Polish-Czech cooperation*. ACEE Archit. Civ. Eng. Environ. vol. 12 no. 4, 19-28 (2015)
- PROJECT FOR PUBLIC SPACES (2000) – *How to Turn a Place Around. A Handbook for Creating Successful Public Spaces*.

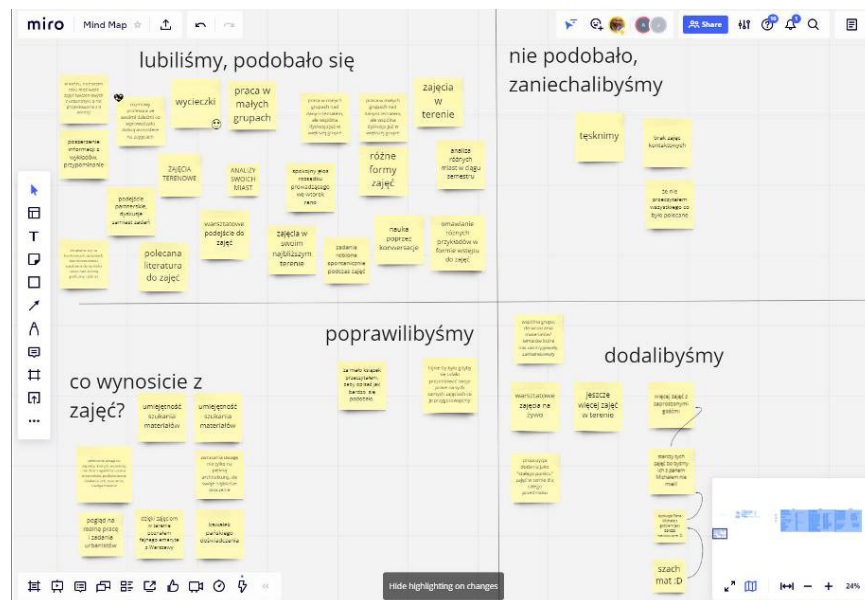


Fig.09 Final evaluation of the seminar using Miro board09



Michał Stangel - urbanist, professor and vice-dean for research at the Faculty of Architecture, Silesian University of Technology. Previously worked for EDAW in London (on London 2012 Olympics masterplan, Nassau regeneration and Dubai Waterfront). Received Bauhaus Dessau Foundation scholarship; as Fulbright visiting researcher at MIT participated in the Zaragoza Digital Mile project. Principal designer for over 50 urban design projects – master planning, regeneration and public spaces. Received 30 prizes in design competitions (including winning Krakow Nowa Huta of the Future) as well as the ministerial award for excellence in urban planning (for a former military site redevelopment masterplan).

Paolo Strina

**Didactics, seminars and workshops in virtual environments.
UNIPR experience in teaching architecture.**

University of Parma, Italy



Fig. 01 Selma Homepage - the E-Learning and Multimedia Service Center of the University

Online platform teaching

The University of Parma has for some time made available to the faculty and students an advanced system for teaching e-learning and FAD based on numerous digital tools. Through the Moodle platform for distance learning most widespread internationally in the university environment, *Selma* - the University E-Learning and Multimedia Services Center - organizes and manages the entire training activity of the University: traditional study courses in presence or entirely online, training courses, masters and advanced training, and for the coordination of projects or working groups. (Fig. 01) Anyone in possession of credentials issued by the University of Parma can enter the Moodle platforms and use their potential. Specifically, the Selma Center guarantees the management and coordination of services such as:

- management of the *Elly*-Moodle platforms;
- consultancy, planning, management and methodological and didactic coordination of distance learning projects;
- management of videoconferencing platforms;
- production of multimedia teaching material through multimedia post-production services and audio / video recordings in the classroom and / or in the control room;
- training dedicated to teachers and tutors;
- other highly innovative services to support teaching activities.

Using these technologies for distance teaching and learning, the ICAR 14 Architectural and Urban Composition group coordinated by prof. Carlo Quintelli, has set up his 6 architectural design laboratories for the year 2020-2021, on the “*Venice Laboratory*” research project. (fig. 02) Three urban facts consolidated in the urban fabric of Venice,

already the subject of authoritative and autograph design experiments that have now become part of modern architectural theory and examples of a consolidated practice with a long Italian tradition on urban design, have been assumed as protagonists of a broad and systematic urban regeneration strategy. The 3 urban facts taken as case studies and design applications are:

- the Giudecca island
- the Cannaregio district
- the Accademia Bridge

The laboratories were divided as follows, in compliance with the academic-ministerial provisions relating to ICAR 14 teaching:

LP1 / A Architectural design laboratory + workshop.

The theme of the first year workshop was the single-family residence on Giudecca.

LP1 / B Architectural design laboratory + workshop.

The topic concerned the project of a single-family building type on the Giudecca island.

LP2 Sustainable architectural design laboratory + workshop.

The workshop dealt with the theme of “Architecture of urban spaces” design in the Cannaregio district, north of Venice.

LP3 Architectural project for sustainable urban regeneration + workshop.

The chosen theme concerned the urban area of the Accademia Bridge as an important urban center, between Rialto and San Marco.

LP4 Architectural and urban design laboratory for the sustainable city + workshop.

The topic concerns the project of an



Fig. 02 Poster of the UNIPR 2020-2021 ICAR 14 laboratory educational program coordinated by prof. Carlo Quintelli

experimental sustainable settlement on the Giudecca island.

LP5 Architectural and urban regeneration project synthesis laboratory + workshop.

As part of the Synthesis Laboratory, among others, the project for the Accademia Bridge in Venice.

A common figure for all the courses, in which, as can be seen from the titles, the size of the workshop assumed considerable weight, was the multidisciplinary guaranteed by the presence of educational modules relating to urban planning, construction sociology. The workshops took place according to a pre-established calendar of lessons, project reviews, external contributions, accessible remotely in synchronous or asynchronous mode, with a corollary of didactic and bibliographic material, all accessible from the UNIPR ELLY e-learning platform. (Fig. 03)

The multidisciplinary nature of the laboratory entailed moments of common verification and synthesis of all the information put in place for the architectural project. Difficult task given the remote development but fulfilled through seminars between the disciplines involved. (Fig. 04)

An attempt, therefore, to educate the project theme through a series of introductory lessons provided on pre-recorded video support or transmitted in real time within virtual environments on the MSTeams platform, which allowed the direct interface, albeit filtered from a screen, between pupils and teachers. The urban project, as well as the architectural and urban composition in general, suffers from considerable limitations if approached at a distance, without an effective direct and physical laboratory comparison. The critical point, precisely, with respect to the methods of teacher-student interaction that took place virtually, are the revisions of the

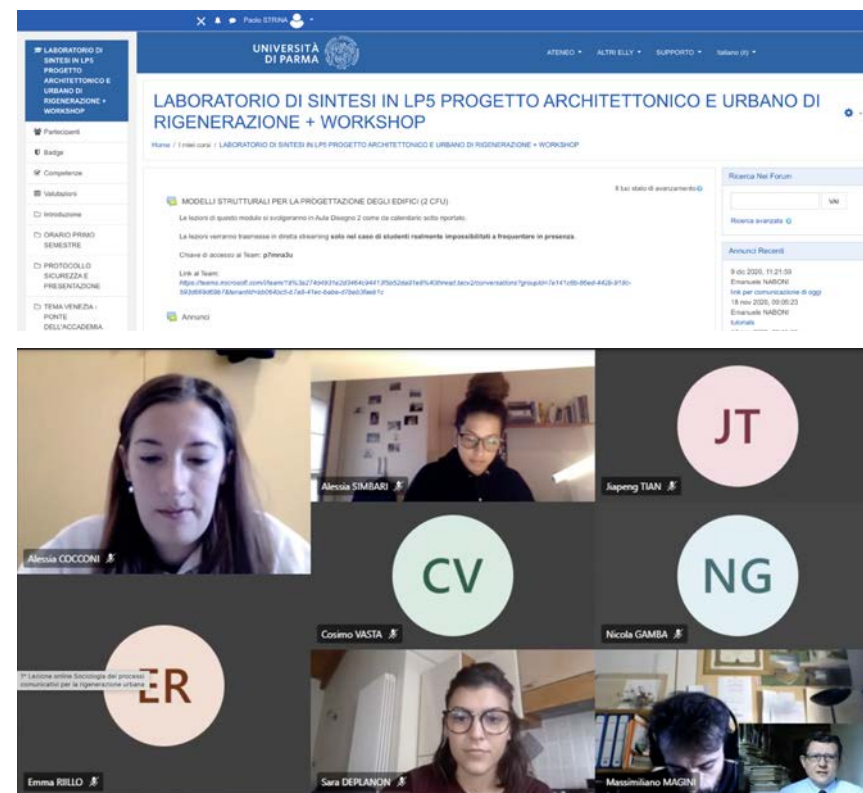


Fig. 03 UNIPR Moodle e-learning platform. In the photo, the page dedicated to the LP5 synthesis laboratory architectural and urban regeneration project + workshop

Fig. 04 Seminar review moment on MSTeams virtual environment



Fig. 05 Poster of the Workshop "Six workshops for Venice"

project. The ordinary tools of representation of the project are often not very effective if viewed on the monitor, due to a series of factors: scale and size of the project itself that does not allow a global view through small screens, resolution and heaviness of the image to be managed on the web, distorted colors from the monitor, etc. The students therefore carried out work on adapting the representation of the project to the communication channels used during the distance learning period, which allowed an immediate and effective transmission of their presentations, thus overcoming the expected criticalities.

The workshop in a virtual environment

The 6 laboratories described above organized, as a moment aimed at achieving a significant progress of the project by the working groups, an intensive workshop lasting one week, entitled "Six laboratories for Venice" (fig. 05). The week saw, as scheduled, the alternation of specialized contributions transmitted through interdisciplinary lectures on the "place Venice", to understand its architecture, urban planning, urban development also through past projects that have remained in the history of architecture as experiments urban on a

large scale, the criticalities, the social dynamics that regulate spatial behavior, especially in post-Covid contexts; all interspersed with moments of group work on the actual project which resulted in a first stage of progress of the project presented by the students during the last final day of the workshop. A second online virtual workshop experience took place within the *ArchéA* research program, among the partner schools: UNIBO - Alma Mater Studiorum University of Bologna; RWTH Aachen - Rheinisch-Westfälische Technische Hochschule; POLSL - Politechnika Slaska; UNIPR - University of Parma; ENSA Normandie - Ecole nationale supérieure d'architecture de Normandie.

The *ArchéA* program has included two thematic workshops on the regeneration of two urban areas, one in Bologna and one in Aachen. The second workshop entitled "Redesigning the medium-sized European city. The Driescher Hof in Aachen's periphery" took place online, through the MStTeams platform. The Workshop, which saw the participation of a total of 30 students (6 from the Master's Degree in Architecture of the University of Bologna - Cesena Campus, ITALY, 6 from the Faculty of Architecture of RWTH Aachen, GERMANY, 6 from the Faculty of Architecture of 'University of Silesia, POLAND, 6 of the Master's Degree in Architecture of the University of Parma, ITALY, 6 of the Ecole Nationale Supérieure d'Architecture de Normandie, FRANCE), was held in English, entirely in blended Teaching / Learning mode with possibility to follow all the works in live streaming from the respective universities. Students of different nationalities faced the project under the guidance of a tutor who intertwined with them in the moments of review of the project progress according to indications provided from time to time also through the help of the cloud, messaging programs, dedicated sharing channels. The final results were evaluated by an international faculty jury during the final live MStTeams session.

Conclusions

Our daily life, even pre-Covid, was already heavily contaminated by a kind of communication carried out through the screen of the various devices that have become, for some detractors of technology, prostheses of our body. These tools, thanks to messaging, sharing, video-calling and cloud applications, have upset the interaction between people. Their use has become a hobby that occupies a large part of our free time. The Covid emergency has only favored the extension of these

communication and virtual sharing systems to work and education spaces, with respect to which, for years, efforts have been made to encourage telework where applicable, already in place in some realities more advanced than the Italian context. The contingencies deriving from Covid have forced to accelerate in this sense, thus clashing with systemic criticalities at a national level deriving from an undeniable widespread technological backwardness and an evident inequality in terms of digital infrastructure equally widespread among geographical areas. Universities, in this specific case, were obliged to convert to flexible teaching or, in some cases, totally remote. From physical classrooms, we have migrated to virtual classrooms in web spaces designed to host online meetings. Architecture as a discipline to be taught and learned has revealed particular difficulties with respect to these new interactive methods. Especially the ICAR 14 discipline, of which the experiences described are exemplary, suffers from the physical distance beyond which it is complicated to discuss the project carried out in a laboratory form. As Ignazio Gardella said, "The teacher's pencil should not be farther than one meter from the eye of the student", precisely because the drawing, the sketch, the representation, the erasing, the model torn and

modified live, are the tools immediate action and understanding of architecture. The added value of teaching architectural and urban composition is precisely the laboratory form that transforms teaching into a constant workshop concentrated in the hours of lessons. On-line teaching and learning, in the dimension of the workshop, must break down these limits, if ever possible, compensating for direct comparison in real time and the traditional tools of the architect's work in the design phase through the installation of cameras globe for the synchronous transmission of the laboratory activity in the various connected locations, the use of large screens on which to carry out the shared project review, the provision of multimedia tablets able to treat the project graphics as a series of levels that can be synchronized with respect to the changes made by the actors of the project according to the principle of BIM design. These deductions / needs emerged precisely during the experimentation of teaching and flexible learning activities which, as the main and undeniable advantage, have the ability to favor the internationality of the university, paradoxically breaking down distances.



Paolo Strina - Graduated in architecture at the University of Parma. In 2015 he obtained the title of PhD at the same university with a thesis entitled "Densification technique through an urban centrality approach of metropolitan type". The thesis is the result of a research project funded by the Emilia Romagna Region and entitled "Designing the built: new integrated quality models for the compact city". He collaborates in teaching at the Department of Engineering and Architecture of UNIPR, under the coordination of professors Carlo Quintelli and Enrico Prandi. He also carries out research activities mainly focused on the theme of urban regeneration, continuing and refining the results of the doctorate thesis.

In 2015 he founded the architecture firm PSAtelier, where he practices his profession. Among his publications: Strina P., The spectacularization of the dismissal, in FAMagazine, Parma, 2017

Pierre-Antoine Sahuc
From pencil to mouse, from face to screen. A teaching experience in times of Covid 19

Higher National School of Architecture of Normandy, France

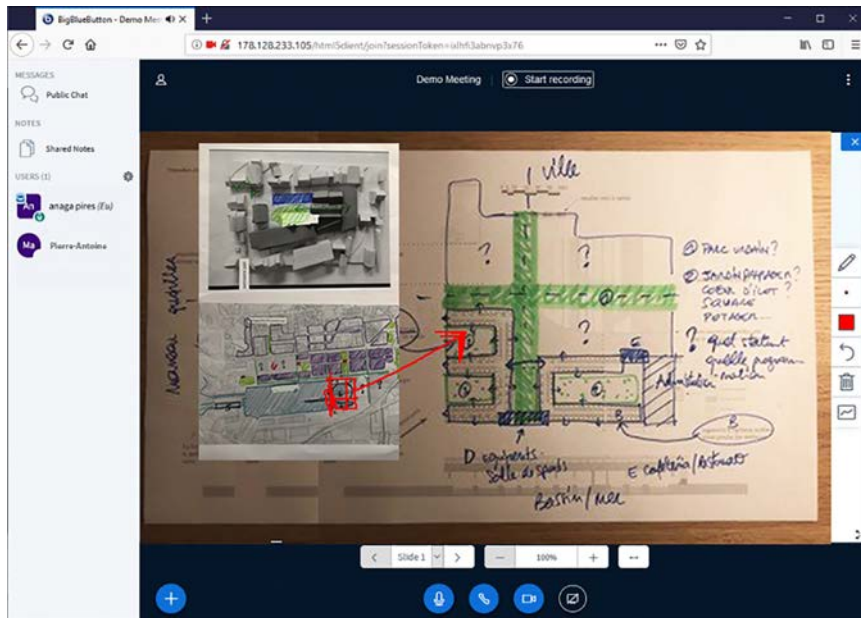


Fig. 01 Sketch exchanged during the covid with my students

2020 became a landmark year in more ways than one. The global health crisis linked to the coronavirus epidemic completely disrupted our behaviour. Travel was restricted to only strictly necessary journeys and these were limited to close to home. Some activities were allowed but social distancing was enforced. In a few days, everything came to halt for an indefinite period of time.

In France, the first measures, which began in March, profoundly changed our lifestyles. The country entered into a lockdown phase and this situation had a profound impact on the way we consumed, worked and travelled. We no longer had access to places of culture, educational establishments. As a teacher in an architecture school, these interdictions were the start of a radical upheaval in the way we taught. How could we react to these measures that would take effect only a few hours later? Were we well prepared?

The objective of this text is to bear witness to the developments and difficulties encountered in teaching in the field of architecture during this period. The repeated phases of lockdown suspended social and societal interactions. The face-to-face teaching experience was radically changed for students and teachers. Communicating only through screens turned the very nature of our communication upside down, albeit unintentionally. This troubling observation also meant that gaps in students' learning were amplified. Be it for ordinary or more innovative actions, the human hand has gradually given way to the machine. This phenomenon of the digitalisation of our social interactions began in a very unsettling context. The following testimony does not claim to be an exhaustive account of the way in which all teaching methods were impacted. Its ambition is to describe the way in which tools for

designing lessons evolved with their environment, as I was teaching.

The specificity of teaching 'Projects' in architecture

French architecture schools call on various skilled individuals (architects, engineers, historians, etc.), most of whom are teacher-researchers or professionals from their field. But regardless of the subjects (history, sociology, technical subjects, arts ...), all the lessons available at school had to be disseminated online. However, the methods used are very different when making lectures available online and teaching a project workshop from a distance. The project workshop, as its name suggests, is a place for experimenting with both architectural and urban projects. It is an opportunity for the students to do practical exercises, using a personal approach. As part of the last year of the Master's course, each future graduate must carry out this special exercise. It requires a great deal of independent, regular work along with a lot of commitment and an ability to reason. Multiple conversations with the teacher supervising the workshop give the students repeated opportunities for questioning the given subject. These conversations enrich the project from spatial, historical, technical, theoretical and cultural points of view. The end of semester exam is an oral presentation in front of a jury, with a limited time-frame. As professional architects, we are regularly faced with this type of situation, for example when participating in major architectural competitions.

First tests, first failures

Following the announcements from the government, all of the usual teaching methods were left in tatters within a matter of days. No lessons could take place

face-to-face. Overnight, the shift towards doing everything at a distance changed the way we were organised and our teaching approach. The situation plunged the whole teaching program into a new digital world, which teachers and students alike had to cope with. As quickly as possible, the school's I.T. department got to work, collecting together suitable resources (online server, tutorials, video-conference platforms, software for recording lessons). Along with a few colleagues, we technically tested these solutions amongst ourselves, firstly without involving the students. The objective was to help the students maintain a visual and intellectual connection with the faculty. For most of us, this was our very first attempt at distance teaching.

Quite naturally, the weekly teacher / student meetings happened via channels on the digital platforms. This service made it possible for different members of the community to get together, at no extra expense, in spite of the geographical dispersal of the students. It also had the advantage of offering a centralised space for dialogue, making it easier to communicate (chat, messaging service). However, very quickly, the limitations of certain tools became apparent. Working on the network, waiting for people to speak in turn was laborious. The students' presentations were also difficult to understand, and were interspersed with long silences. The results of trying to transfer this unique teaching process to a virtual network were not as positive as we had hoped. The optimism of the first sessions suddenly subsided. The morale of the students was low. New modes of conversation and communication based on interactivity were needed.

New tools for the students' projects

In the architectural profession, the development of any project requires a method and any potential project begins with a design phase. This can take different forms, depending on which materials and means are deemed useful by the designer. The range of tools can be as broad and inventive as the person using them wishes. To develop their projects in incubation, the students have several tools and can combine elements which are graphic or language based (such as drawings, models, annotations ...). For the students, the tools of expression and creativity at their disposal were now limited. Isolated in lockdown and feeling under pressure in their student accommodation, they spoke of the lack of essential equipment (a printer, cardboard for making models...). However, most of them were able to do drawings and had a connected computer

or other electronic device. The fact that the usual tools were lacking became a methodological issue. From an educational point of view, the role of drawing is fundamental in architectural and urban design activities. It is a preparatory step, part of a larger process. Intuitive, iterative and fast, it has to be learned personally by the students. However, a sketch cannot be so fluid when it is digitalised. This was a notable observation right from the beginning of lockdown. Once projected onto the screen, the scanned drawings were not easy to interpret visually for other people. This problem was linked to the fact that the students did not master the different scales involved in their images: on the one hand the object drawn on paper (real) and, on the other, the object projected onto a screen (virtual). As a virtual medium, and as the only means of communication, the connected computer called into question the entire creative process.

Gradually, some students stopped using manual drawing, replacing it with digital techniques. There was plenty of time available, which was conducive to lowering barriers to learning. The students wanted to discover new ways of designing. The hardware and applications at hand were not very numerous but were varied: graphics tablets, digital cameras or modelling software. Depending on the scale and the phase of creation, these tools began to constitute formidable allies in communicating about a project. Whether using photo-montage, three-dimensional models or videos, these different media favoured the development of new architectures and accelerated new ways of thinking about space. Projects which at first seemed to be thought through only piece by piece finally became a whole. The perception of the projects was thus more complete and comprehensive. Between each period of lockdown, the teaching team and the students got together to share and discuss their experiences. The pedagogical assessment concluded that the teaching methods had to be completely redesigned to enable teaching at a distance. In a way, the transition to digital tools marked an important step in terms of methodological experimentation for the development of the project. It was the ability of each student to cope with changes and develop an idea that became essential.

Towards a growing development of different practices

In recent years, architectural and urban issues have shifted towards urban ecology, the environment, and climate change. With the health crisis and the overabundance of connected objects: the trend is

towards new technologies. This abnormal context has quickly shifted digital tools to the centre of our concerns. A way to escape the sad reality of the moment. Architecture is no exception. The growing development of IT tools is already giving architects new possibilities for expression and collaboration. A clever ecosystem for designing differently, making simulations and even thinking about recycling a building before it is built. Depending on the objectives, approaches can be experimental in terms of production or formalisation. Work can now be synchronised on remote servers. Working alone or with a multidisciplinary team of people who are dispersed geographically is now feasible. These smart tools can already control the atmosphere of places we will be living in tomorrow. Virtual reality changes the relationship between the architect and his project, between man and machine. These technologies are popular with new generations of students because they are renewed, interchangeable and interactive.



Pierre-Antoine Sahuc - graduated in architecture, he is currently Associate Professor in Sciences and Technics at the National Architecture School of Normandy. In addition, he teaches numerical and graphical tools in the Bachelor of Science in Architecture Degree / specialization "Urban and Sustainable Development" of the Caen University, and the "BIM project management" at the National Center of Art and Crafts (Conservatoire d'Arts et Métiers) in Paris.

In 2012-2017, Pierre-Antoine Sahuc led an education entitled "Atlas of Urban and Architectural Forms » on the analysis of reference projects in European capitals (London 2016, Berlin 2017). Accompanied by a professional graphic designer, this work as a bachelor student led to the development of a guide containing historical maps, analytical drawings and documentary photographs in different scales.

Since October 2018, he is vice-president of the order of architects Hauts de France and this CAUE (Consulting in Architecture, Urbanism and Environment), that organizes events (conferences, exhibitions, formation) for the dissemination of architectural and urban culture.

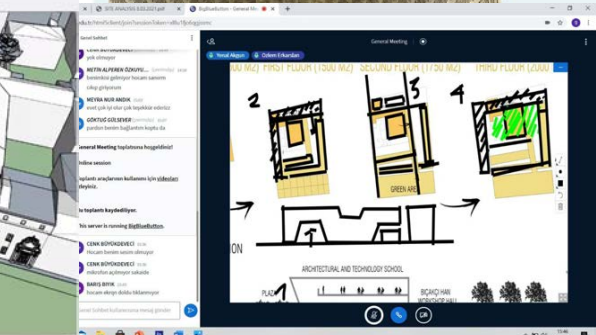
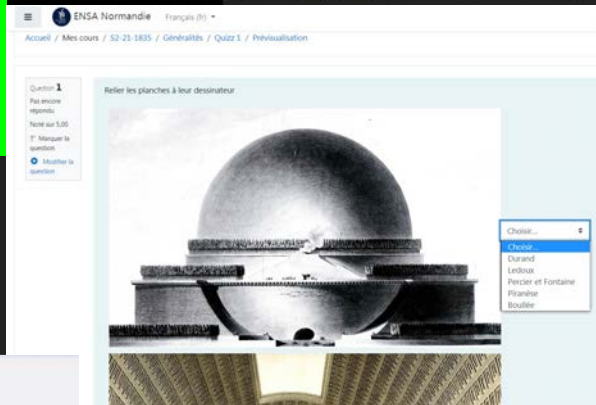
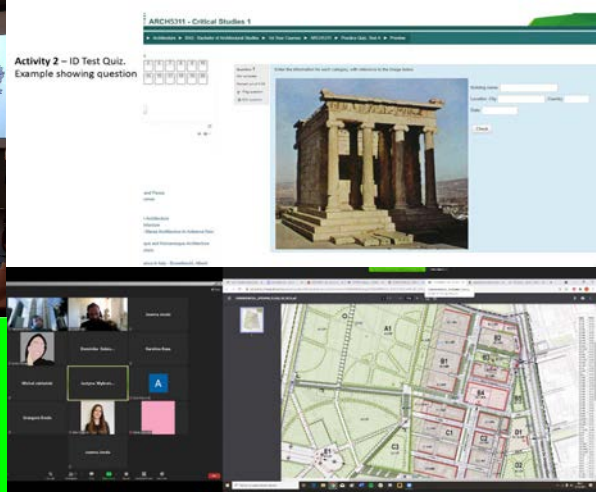
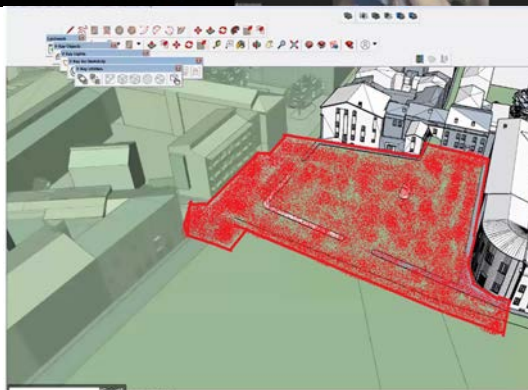
**Conclusions: Guidelines for a blended
flexible training activity in architectural HE**



ESTHER GIANI PRETESTI

IT

D-2196³
EXCURSIONS ON
CAPACITIES



Thanks to the numerous contributions collected around the theme, the manual returns a broad and heterogeneous framework to trace the state of the art on flexible and mixed training in architecture. From the analysis of the testimonies collected, some key points emerge to be developed in order to transform the new teaching methodology imposed by the pandemic into a permanent practice that integrates traditional frontal teaching. We proceed with a brief summary of the academic experiences published in order to arrive at a reasoning useful conclusion to outline future developments on the subject.

Manual introduction

Enrico Prandi introduces the teaching of architecture and architectural design from the perspective of Open Education and Innovative Practices, through the new flexible and mixed teaching methods, between Mooc and E-Learning. It carries out a survey of the state of the art achieved on the subject, scanning among existing manuals, Webinars and thematic publications around the relationship between teaching architecture and mixed and flexible teaching, including the contributions included in IO3. As coordinator of the working group belonging to the University of Parma within the ArchéA research program, he makes use of the experience of the Design Workshop carried out on the case study of the city of Aachen to get to the heart of the reality of the design laboratory at the time of COVID-19. From the examination carried out, he envisages a future in which universities will increasingly need to open permanent working tables on the theme of mixed and flexible teaching in order to gradually improve the educational offer for the student.

Best practices (Guest professor)

Alessandro Camiz with his contribution describes the results achieved by the research unit dedicated to teaching architecture online, called "Architecture online", set up at Özyegin University. The unit has created a Distributed Virtual Learning Environment (DVLE) containing the new tools dedicated to Teaching and Learning Activities (TLA) aligned with Intended Learning Outcomes (ILO). He concludes, from this experience, that the teaching of architecture based on new means of communication and design is useful for the training of the future architect who is increasingly projected towards shared work and carried out through new technologies.

Tomasz Bradecky addresses the theme of virtual exhibitions applied to the teaching of architecture and urban design, experimented at the Silesian Polytechnic University, as an integrative activity of the teaching and training process.

Renato Capozzi together with a large working group, through the direct experience lived within the DIARC of the University of Naples, tells how the architectural project can be transmitted through virtual exhibitions with the help of augmented reality.

Best practices (Call for papers)

Laura Carnevale and Fabio Colonnese talk about the organizational difficulties of their teaching path of Descriptive Geometry and Architectural Design at the La Sapienza University of Rome. A paradigm shift based on the use of advanced digital tools, experimented with the redesign of the Denziger House by Frank O. Gehry. Among the critical points, the poor concentration of students and the ineffectiveness of some digital tools. Among the

potential, more solidarity among students.

Dariusz Masły talks about his distance teaching experience carried out in his 3 teaching courses of Sustainable Architecture at the University of Silesia. Seminars, lectures and project reviews through new virtual channels. For Masły, the recording of the aforementioned activities would favor the construction of archives of didactic material at the complete disposal of the student according to an “open” perspective.

Renata Jadresin Milic and *Catherine Mitchell* talk about the potential of an alternative approach to teaching the history of architecture. Their attention is focused on the attempt to overcome the limits of pedagogical competence between the discipline of the History of Architecture and that of the Architectural Project, implementing strategies for involving students in distance learning.

Anna Kossak analyzes her own distance teaching experience through a sort of sociological survey that highlights critical issues and potential according to a bilateral student-teacher vision. Among the main criticalities emerge the difficult group work on the project, the extended lesson time to compensate for interactive unexpected events, the working time that expands in free and private time due to the numerous virtual meetings. Among the potential, the learning of new methods and tools of communication, the reduction of costs.

Ozlem Erdogan Erkarıslan and *Yenal Akgün* of Yasar University of Izmir, tell how they compensated for the lack of a “face to face” relationship essential for teaching the project, through the use of virtual environments. They deduce from their experience a list of “pillars” of distance learning: - timetable; -means of learning; -work tools for the project; -tools for project criticism; - tools for the visual communication of the project; -evaluation of the project.

Veronica Ferrari of the Politecnico di Milano talks about her approach to laboratory teaching through the use of common working models to which each group can make changes, insert information and extrapolate data in a logic of BIM files organized by layers.

Donatella Scatena, *Zeynep Gulel*, *Sergio Amedeo Terracina*, *Virginia Volanti*, following their didactic laboratory at the Sapienza University of Rome, highlighted some weaknesses of the new mixed and flexible teaching: - not everyone has adequate space in their homes; - too much time on remote access monitors; -little sociability; -difficult sharing

of the project; - difficult to interpret feedback from colleagues and teachers during reviews; -difficult perception of the degree of participation of the virtual class.

Esther Giani, using the SWOT analysis method, analyzes the outcome of her online workshop at the IUAV in Venice, organized as a “role-playing” in which each student chooses their avatar, deducing the main criticality: the lack of contact physical between the participants.

Renzo Lecardane, *Paola La Scala*, *Bianca Andaloro*, of the University of Palermo, through an inter-university network called Campus Asia, have set their distance teaching on the project of temporary events in Val Bolo-gnetta (PA), imagining the creation of “Meta-theoretical scenarios” dedicated to Sicilian cinema within the eco-system of the Milicia river, with the help of digital communication tools.

Maria Panta with *Joseph Agyei Danquah*, of the German University of Cairo, recalls the need for a general change of paradigm of the didactics of the architectural project. They tried it during their Trans African Dialogues Series, highlighting 4 points on which to set the new paradigm: 1) teaching methods; 2) sources of knowledge; 3) methods of verifying learning; 4) methods of discussion of the project.

Antonio Margagliotta, *Paolo De Marco*, *Sete Alvarez Berrena* with the contribution entitled “Beyond the screen”, tell about their teaching experience focusing on the methods and tools of virtual and digital visualization of the project.

Olimpia Niglio and *Tsumeaki Fukui*, with their contribution, focus attention on the multidisciplinary nature of the design laboratory which affects the times, contents and methods of distance teaching.

Camilla Bidaud states that distance teaching has been practiced since the 90s in France for some subjects such as the history of architecture. The health emergency offered the opportunity to enhance the necessary equipment and improve the ways of teaching and verifying learning, also through the use of web TVs and online quizzes on platforms made available by universities.

Bradley Walters, of the University of Florida, talks about his teaching experience at the time of the Corona Virus as an opportunity to transform traditional teaching through the permanent integration of flexible methods carried out using well-structured digital tools, hardware and software. *Milena Guest*, *Roula Maya*, *Antonella Di Trani* recount the didactic experience of their course “From the city to the metropolis” in which,

starting from a series of references, the student analyzed architectural and urban utopias of the modern in order to convert them into models of ‘living in line with current real contingencies and conditioned by increasingly probable emergencies. The reinterpretation of “utopian” examples, born as a critique of traditional community models and a pretext for the imposition of new social styles, was transmitted by the students through written essays and photographic collages.

Marie Chabrol, *Anne Portnoi*, *Gabriella Trotta-Brambilla* talk about their distance learning experience in the design laboratory at ENSA, focused on the urban regeneration program of the city of Cherbourg-en-Cotentin. The Ecole Nationale Supérieure d'Architecture of Normandy was called by national politics to be part of the partnership phase on the strategic project. The students had to interact remotely with the various actors involved in the regeneration, immersing themselves in the real practice of the architect, from sharing design choices to displaying the concrete proposals.

State of Art: the experiences of ArchéA's Network

Lamberto Amistadi, through the experience of flexible teaching carried out at the University of Bologna Cesena, identifies the transmissibility of results and experiences as the maximum criticality of the distance teaching and learning method.

Enrico Prandi and *Lamberto Amistadi*, respectively of the University of Bologna-Cesena and del University of Parma, examine the potential and criticalities of MOOCs, distance learning courses that involve a large number of users, through their direct experience of the online course created within the ArchéA research project.

Timo Steinmann, of RWTH Aachen, explains the methodological evolution of the development of the ArchéA research project launched in an “analogue” way in 2019 and completed in a “remote digital way” in 2021, probing its criticalities and potential. *Felix Mayer* brings his distance learning experience to the space design department at RWTH in Aachen. *Michał Stangel*, of the Silesian Polytechnic University, focuses on the methods of observation and analysis of the urban structure as a first fundamental step towards the project, through web tools with which to compensate for the impossibility of a physical inspection.

Paolo Strina, of the University of Parma, focuses attention on the methodology of the online workshop, referring to some experiences carried out by the ICAR 14 didactic group coordinated by

prof. Carlo Quintelli. Among the potentialities that have emerged there is the possibility of breaking down physical distances in favor of a greater internationalization of the university; among the critical issues there is the difficulty in teamwork without direct contact.

Pierre-Antoine Sauch narrates the difficulties of sharing and communicating the architectural project without adequate equipment available to each student in their private spaces, without being able to rely on the resources of the Universities in the appropriate places. The health emergency has forced the inclusion of new technologies in personal domestic spaces, thus prophesying the future atmospheres of the workplace.

From the examination of the published contributions, key points of the flexible and mixed training method in architecture emerge, each characterized by potential and criticality, listed in the following table.

Key points	Critical issues	Potential
<i>Organization of study plans according to training credits</i>	- extension of lessons beyond the established duration to make up for delays due to unforeseen events in the new teaching method	- favored multidisciplinary
<i>Construction of lessons and courses</i>	- retrieval of study materials by students	- integration of traditional teaching materials with synchronous or asynchronous streaming video contributions
<i>Student-teacher interaction</i>	- difficult interaction between student and teacher - inability to monitor the overall level of attention of the class	- possibility of facilitated contact with the teacher by the student
<i>Transmission of project information</i>	- ineffectiveness of some tools for transmitting results with respect to the methods of representation of the architectural project	- reduction of costs for the production of project documents
<i>Project reviews</i>	- impossibility of working directly on the materials of the project (drawings, models, ...) - Difficult understanding of the teacher's instructions by the student	- use of new augmented reality technologies with web interface for the digitization of review processes
<i>Educational activities</i>	- laboratory activity difficult to conduct online	-reduction of physical distances
<i>Comfort and personal growth of the student</i>	- poor sociability - prolonged times spent in front of the monitor - decrease in the capacity for inter-relationship	- cost reduction - distance reduction
<i>Project evaluation</i>	- difficult transmission of experiences, especially as regards the architectural and urban design - difficult control of the student in the final evaluation phase of the project, especially in the case of written exams	
<i>Spaces for teaching and learning</i>	- invasion of privacy due to the webcams that often frame the home space of the student and the teacher - more relaxed attitude on the part of the student due to the familiarity with the domestic-private space compared to the institutional-public one	- rethink domestic spaces in favor of promiscuity useful for work and residence - more relaxed attitude on the part of the student due to the familiarity with the domestic-private space compared to the institutional-public one

<i>Educational material and research sources</i>	- difficulty in finding bibliographic sources useful for the student's imagination	- formation of open source databases from which the student can draw references and information
<i>Empathy between student and teacher</i>	- difficulty in stimulating the student's intellectual curiosity	

The pandemic emergency has accelerated the conversion of teaching methods, imposing on teachers and students a sudden and difficult adaptation to new work and learning tools.

To date, it is inevitable to highlight more critical issues than potential in the new paradigm. The merit of the university scientific community was certainly that of being able to cope with the crisis in order to give continuity to the training activity for the student, discovering ways and tools that could be adopted permanently to integrate traditional teaching, which is difficult to replace, especially in teaching architectural design. This is how an academic future is increasingly focused on flexible and mixed teaching methods that can be perfected starting from the first results achieved in the two-year pandemic emergency 2020-2021 from which to extrapolate guidelines for future developments.

Definitions

Augmented and virtual reality

Augmented reality technique has been explored either inside the museums or in the open-air in archeological sites. On-site virtual reconstructions can be presented outdoor in real environments to substitute physical rebuilding of historical remains, which could interfere with archeological research. (Cláudio A. P., Carmo M. B. 2013)

Blended learning (Blended)*

Learning mode that combines different learning environments, typically face-to-face and remotely. It was born before the COVID19 pandemic but remains of limited use in non-telematic universities

Common model

Virtual project model elaborated simultaneously by the project actors according to a BIM logic. Each actor deals with a single part that converges to the whole. A series of layers overlap the work base, implementing the information. The latter can be interrogated in order to extrapolate analytical data of the objects constructed and represented.

Delivery Teaching *

According to the ANVUR 2017¹ guidelines, one of the two divisions of the teaching methods of a teaching delivered electronically in the form of video-lessons by the teacher in charge of the course (with the possibility of using video-lessons or open courses of other Universities).

Digital boards

Remote interface multimedia screen. The documents displayed on it can be shared and modified remotely by multiple actors and the information exchanged is synchronized in the shared document in real time.

DVLE Distributed Virtual Learning Environment ³

Distributed virtual environment in which the tools available to faculty and students converge for teaching and distance learning.

3d and augmented reality model

Is an enhanced version of the real physical world that is achieved through the use of digital visual elements, sound, or other sensory stimuli delivered via technology. It is a growing trend among companies involved in mobile computing and business applications in particular. It's, also, a good practice to communicate and show the architectural project.

E-learning platform

Online container for scientific learning of the disciplines. It contains educational materials on various media (videos, slide shows, tutorials, texts, etc.) with the possibility of performing learning tests in real time through dedicated quizzes.

ILO Intended Learning Outcomes ⁴

Objectives of flexible and blended teaching and learning.

Integrated Digital Education*

Teaching method proposed in the second phase of the COVID19 pandemic to integrate the methods of the “Fully distance learning” with face-to-face and blended activities.

Fully distance learning*

Method adopted during the initial phase of the COVID19 pandemic, mainly synchronous.

Hybrid teaching methods

Hybrid learning combines face-to-face and online teaching into one cohesive experience. Approximately

half of the class sessions are on-campus, while the other half have students working online.

High-hand interaction device

“Over the last few decades, human–device interactions have changed from text inputs to graphical user interfaces. Therefore, we need to see how we can serve the multifaceted human interface, for a new era of interactivity, where smart interfaces can “see,” “hear,” “feel,” and “understand,” transforming our experiences with the content of all form-factors to make them more engaging and immersive. These advances, coupled with remarkable innovations in sensing and display technologies, will transform today's way we see the smart systems and, for these, oxides at a nanoscale will play a core activity, especially for the growing concept of system-on-panel (SoP) to enable various functional devices, such as driver, sensor, memory, and controller devices, to be integrated into a single panel for achieving high-performance, low-cost, and more compact smart/intelligent products. Interaction device: is the device where the user can receive position, localization, navigation instructions, etc., and interact with the information. It can be a specific dedicated device, a computer, a tablet, or, more commonly, a smartphone. It is something that the user takes with himself or herself” (www.sciencedirect.com)

Immersive learning

Immersive learning is a learning method which students being immersed into a virtual dialogue, the feeling of presence is used as an evidence of getting immersed. The virtual dialogue can be created by two ways, the usage of virtual technics, and the narrative like reading a book. The motivations of using virtual reality (VR) for teaching contain: learning efficiency, time problems, physical inaccessibility, limits due to a dangerous situation and ethical problems.²

Intellectual output

Result of a thematic activity carried out at a distance, summarized in a product suitable for the transmission of the contents to be highlighted and shared by the “shared-community”.

Interactive Teaching *

According to the ANVUR 2017 ¹ guidelines, one of the two divisions of the teaching methods of teaching delivered electronically in the form of e-tivity and interactive and collaborative activities (e.g. interactive videoconferencing, homework, group work, formative assessments , etc.).

Learning Management System (LMS) *

According to the ANVUR 2017¹ guidelines, the application platform (or set of programs) that allows the delivery of courses in e-learning mode.

MOOC Massive Open Online Course ⁵

Courses designed for distance learning that involves a large number of users.

Moc differs from the classic online course for the following reasons:

- Content is accessible 24/7
- Media is open source
- Learners are encouraged to share and contribute materials
- Modules are 5 to 10 minutes
- Content is edited when needed
- Lectures are pre-recorded
- All content is available from the start
- Self-paced / customized learning path
- Feedback is dependent on classmates
- Course is open-ended with no due dates

On-line quiz

Methods of verification of distance learning, accessible from e-learning platforms used for teaching.

On-line Workshop

Starting from the traditional workshop, that is groups of people who work on a common project theme, addressing it with different approaches, the online workshop is nothing more than the same activity transferred in a virtual environment and carried out remotely, with the aid of multimedia tools and digital including those mentioned in the definitions, which allow interaction between the various users involved in the workshop itself.

Parallel Teaching*

Methods of teaching delivery that can be enjoyed both face to face and remotely.

QRcode

Code that can be scanned with a special reader or enabled smartphone, equipped with a link to web content that can also be consulted in augmented reality. Using the Internet of Things, by scanning the QRcode, it is possible to enter the architectural project and interact with the information contained therein.

Sharing community

Communities, actually groups of people, where information collected in the form of multimedia data is exchanged and shared, useful for increasing the thematic state of the art and one's own and collective know-how.

Sketchfab

Leading platform for 3d communication system and augmented reality.

Single sign on (SSO) *

Access control system that allows a user to perform a single authentication valid for multiple software systems or computer resources for which he is enabled.

Virtual and hybrid exhibition

A virtual exhibition (VE) was earlier defined as an online Web-based hypertextual dynamic collections devoted to a specific theme, topic, concept or idea (Silver, 1997)

A virtual exhibition (VE) is a Web-based hypermedia collection of captured or rendered multi-dimensional information objects, possibly stored in distributed networks, designed around a specific theme, topic concept or idea, and harnessed with state-of-art technology and architecture to deliver a user-centered and engaging experience of discovery, learning, contributing and being entertained through its nature of its dynamic product and service offerings (Foo, 2008).

Views board

Remote lesson program containing the activities planned within the educational course.

Virtual concepts board

Conceptual elaborate useful for the representation and transmission of contents in an effective and intuitive way. In architecture, it coincides with the manifesto table of the project, adapted to the requirements dictated by the multimedia transmission channels and used for the remote interface.

Virtual display gallery

Virtual exhibition spaces in which the subjects of a virtual exhibition are exhibited with which the user / observer / user can interact through the use of multimedia devices that enhance the senses.

Virtual rooms

Virtual classes of students configurable using special applications for remote meetings / lessons.

Notes and references

* The definitions are taken from the document “Post-Covid teaching” by the Working Group on post-Covid teaching set up by the Crui (Conference of Rectors of Italian Universities)

¹ National Evaluation Agency of the University System and Research

² Freina, Laura; Ott, Michela (April 2015). “*A literature review on immersive virtual reality in education: state of the art and perspectives*”. The International Scientific Conference Elearning and Software for Education. 1: 133–141.

³ Camiz A., «A Distributed Virtual Learning Environment (DVLE) for a Constructively Aligned Architectural Design Studio» in *Manual of best practices for a blended flexible training activity in architecture for higher education institutions*, FAMagazine n.56-2021

⁴ Ibidem

⁵ Amistadi L., Prandi E., «The ArchéA online Course on the themes of Urban Design. A teaching/learning educational path» in *Manual of best practices for a blended flexible training activity in architecture for higher education institutions*, FAMagazine n.56-2021