

Designing from afar: the challenges, potentials and limitations of an on-line student design workshop

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ABSTRACT: The last few decades have seen architecture respond to environmental, social, political, economic and cultural factors that have profoundly influenced design and investment. Identifying and understanding these design and investment interconnections may bring quality to projects and achieve sustainability outcomes. Challenging the context and conditions of professional activity in architecture has opened a worldwide discussion on architectural education and pedagogy. A shared consciousness sees architectural education across the world acquire more experimental ideas and transdisciplinary approach to teaching. Hence, project-based learning and more recently virtual knowledge transfer have become part of the mainstream teaching concepts. In this article, the author presents an on-line teaching workshop focused on architectural interventions in heritage sites located in different cultural environments. Teams of students under the supervision of tutors in Kraków, Poland, and Jerusalem, Israel, will elaborate designs that take into account the history, context and specificity of the locations. A pilot study undertaken in Kraków, Poland, demonstrates the usefulness of the proposed workshop.

INTRODUCTION

Rapid technological change and tighter collaboration between universities and industry have a great impact on university education content and its delivery mode. In the past decades, the impact and the ensuing changes have been more profound and faster than ever before. Today's education systems cannot provide on their own the knowledge and skills required for active participation in the workforce, and life-long learning has become a necessity for most professionals.

There is a lot of discussion on the future skills of graduates. Skills mainly refer to: *how we use what we know*. They are demanded by employers and represent the key to teaching, so that students fully understand the content knowledge of their studies and are able to successfully transfer it to new environments. To this end, these future skill sets have to be intrinsically connected to knowledge because it would be implausible to teach skills without a supporting content base [1].

In general, university education must equip students with the kind of adaptability that will prepare them to handle changes in judgment and changes in how people view teamwork and leadership. These are competencies that employers are asking for. There is, however, little evidence to show how these skills are being taught in degree courses/programmes. And yet it appears common sense to provide students with the skills enabling adaptation to change after they graduate. Digitalisation is likely to bring substantial changes in access, content, organisation and the delivery of higher education. However, in this new digitised learning environment, technology needs to be balanced with social awareness and human contact.

The above issues will present a challenge to current university structures. Globalised universities need to provide both, full access to IT hardware and software, and also face-to-face contact between the institution and its students, regardless of their location. The availability of the relevant services and networks must extend to all the parties involved, viz. students, staff, related industries and institutions [2].

Digital technology is now widely available in many universities and teaching institutions. It is primarily used as a delivery method for existing content and pedagogies, but rarely used to introduce innovative teaching and learning models that can respond to social and technological change. Innovations such as virtual reality (VR), augmented reality (AR), artificial intelligence (AI) and the wide use of biometrics are still at the initial phase of implementation [3].

The corollary is the transformation of educational institutions to rearrange the learning space. This does not simply mean moving chairs and tables, but using multiple physical and virtual spaces both in and outside the learning environment. Content personalisation and authentication can be achieved by cutting-edge technology that employs personal data, such as facial expressions or neural signals. This can also enable flexible individual and group work on academic topics regarding current social and community needs. In that way, universities will transform into learning hubs based on the strength of communities to deliver collaborative learning and to build formal and informal education-related relationships [4].

Universities, therefore, will not focus primarily on teaching students to pass examinations. They will instead allow them to think critically and purposefully engage with the surrounding world. An interdisciplinary perspective in university education is also essential, and this type of learning can bring beneficial change to the world on a small or larger scale [5].

The contemporary world has become more multi-faceted and complicated than ever before. People are experiencing uncertainty and insecurity, not least because of the threat of climate change, demographic crises and unequal access to goods and services. There are also other challenges, and it must be recognised that broad and immediate access to information, including virtual will not be sufficient on its own to resolve the present and future problems.

It could be argued that the current coronavirus pandemic has brought unparalleled change to the world that has helped redefine some key teaching and learning concepts. Architecture and architectural education have also had to respond to this more complex reality by using available technologies to extend the educational offer and make it more outcome-oriented; to exchange and transform information needed in the design process to respond to changing environmental, social, political, economic and cultural conditions.

The current conditions are conducive to a transdisciplinary approach to teaching in architecture, where knowledge might be acquired virtually with on-site education based on real projects and active learning. Nevertheless, the on-line teaching of architectural courses since the worldwide Covid-19 pandemic has been focused on distance designing. However, this approach holds a lot of potential, but also has some limitations.

DESIGNING FROM AFAR: STUDENT DESIGN WORKSHOP'S CHALLENGES, POTENTIALS AND LIMITATIONS

The proposed workshop concerns the re-arrangement of heritage squares for a better spatial quality in Kraków, Poland, and in Jerusalem, Israel. At the workshop, a *distance design process* will be identified and defined, and the principles for high quality outcomes of the concept projects will be determined. At this stage, three locations in each partner country were chosen for the subject of the project workshop. The selected sites are three heritage squares in Jerusalem, and three in Kraków. The choice was made on the basis of a strong historical context, a multi-layered trace of the past, and a complex set of meanings associated with the sites. These elements reveal the complexities in the design process to enable optimal urban and architectural interventions. The interventions are intended to increase the social and spatial quality of the places.

The sites in Poland represent two cultures: Polish and Jewish. Located in the heart of the Jewish district, Kazimierz, the three squares have experienced joint development and the peaceful coexistence of two communities over several centuries. The extermination of one of them caused a void that lasted for a few decades. Since the early 19th Century, the revitalisation and strengthening of tangible and intangible heritage has been slow but is ongoing. The success of further spatial interventions might further improve the result. The complex circumstances regarding projects to improve the squares' public space, make the design process rather challenging.

This challenging and multi-faceted design process can be facilitated by the method of conceptual thinking [6] that will enable the assessment of teamwork potential, communication practices within teams and between the groups representing different countries. Working on such a complex topic may also generate some synergy and mutual inspiration in collecting, exchanging, analysing and evaluating information, and also the readiness to adopt expert functions and creative decisions. Participants of the workshop are supposed to form design teams of 2-3 students; each team to elaborate one site: Israeli students a site in Kraków, Polish students a site in Jerusalem. Students will also form international groups consisting of two design teams: one from Israel and one from Poland.

Table 1 presents the 15-week course programme and methodology, indicating the teaching method referring to each task. The international joint groups will enable effective collaboration and discussion on the obtained partial and final results.

Table 1: Hybrid course programme and methodology for two student teams: on-site and on-line as envisaged by the author.

No.	Period/duration	Aims and actions	Outcomes	Form of teaching
1.	Week 1	Introduction to the course	Project aims and expected results defined	On-line
2.	Week 2-3	Intercultural training with three on-line self-assessments, readings and literature studies	Discussion boards comparing students' views and examples of what each student would change	On-line
3.	Week 4-5	Virtual reality (VR) field trips to the sites; on-line meetings with experts on heritage, tourism and local government representatives	Completed site examination; a learning management system for students to interact and share resources	Hybrid
4.	Week 6-7	Urban analyses, discussion and conclusions; synchronous meetings	Boards including the analytical phase results, conclusions	Hybrid
5.	Week 8	Joint meeting discussing the results	Common guidelines for the project formulated	On-line

6.	Week 9-11	Elaboration of urban projects	General concept of the urban layout	Hybrid
7.	Week 12	On-line review and discussion	Comments and corrections to the proposals	On-line
8.	Week 13-14	Elaboration of urban projects - sections and details; implementing changes to the concepts	Changes and corrections implemented	Hybrid
9.	Week 15	Projects ready for final presentations	Projects presented	On-line

The course programme can be divided into three stages that refer to critical professional tasks, such as data collection, discussing and concluding study results, and urban projects' completion. Below, the three steps are presented in more detail, highlighting the aims and necessary actions. Table 1 and the elaboration of the stages cover the essence of the teaching concept.

Stage 1: Collecting Data (Weeks 1-5)

One design team works on the site located abroad and collects all the necessary information and data via the Internet. Students indicate and access their foreign partners' valuable data sources to achieve the best selection of information. They may share with their colleagues their impressions, experiences, memories, family tales, old pictures and maps, images, books, newspapers and local media sources of any type. They can personalise information and make it emotional by arranging, e.g. virtual walks to discover various details and spaces of seemingly secondary significance that may complete the image. Comparing information obtained from afar with the sources and materials available on the site will reveal the volume and nature of data not available from a distance.

Stage 2: Discussion and Conclusions (Weeks 6-8)

Within stage 2, each team presents the results and discusses the following issues with foreign partners:

1. Perception and valorisation of the space characteristics.

Different physical features characterise each urban interior, which is described by the scale, proportion and interrelationship of objects. This is referred to as a composition. The knowledge of a site completes the technical condition of buildings and materials used for structures, finishes and paving. The urban interior and its immediate surroundings create a unique urban complex. Observation and valorisation are part of the procedure of urban analysis preceding the design process. While the observer can evaluate elements of the composition objectively, the assessment of space and the emotions, the space evokes are subjective and escape unequivocal evaluation. Therefore, collective, even on-line, discussion on the results obtained through urban analysis can increase the quality of outcomes and the value of conclusions.

2. Identification of *sense of place*: place identity and place attachment.

In the case of objects of strong historical value, the sense of place encompasses an important conglomerate of meanings and emotions.

Place identity is a moot notion, which encompasses a large heterogeneous set of components including personal cherished aspects, physical facets, such as an environmental condition and landscape, social aspects, such as lifestyle, social attribution, social status, and other less precise terms, such as spirit of place, soul of place and cultural landscape [7].

Place attachment focuses on evaluations of places, while place identity focuses more on the way in which places form part of one's identity. They may be primarily interrelated ...with the meanings and experiences in place, which often involve relationships with other people [7]. Any physical attributes of the environment may be filtered through an emotional bond with the place [8].

Many places are significant for communities, adherents of specific religions, citizens of states or various cultural circles. World tourism is developing by making such sites available and enriching them with the necessary accompanying infrastructure. Regardless of the availability of visual and verbal information on such places, people travel to visit them. The identity of such sites is accepted and shared. However, there are cities/places of importance to two or more cultures, but of contradictory meanings. Both Kraków and Jerusalem, selected for the workshop, belong to this group. Discovering and collating all the emotional and psychological values needs discussion among representatives of the two cultures and their agreement on future design interventions.

3. Disclosure of cultural codes.

Cultural codes transmit values that represent the past, but are inherited and mastered. In that respect, they always exist in the present. Understanding *cultural codes* helps understanding people, their behaviour, societies and draws importance

in past and future forms. One of the elements of a cultural code are aesthetical values - perception of beauty, harmony, style, manifested by symbols and signs [9]. Architecture can express such marks through the composition of objects and hidden iconic signs, e.g. in the shape of floor plans. A part of the architectural work that usually contains such symbols is a detail that is easily noticed and identified by an audience [10].

Cultural codes are not easy to reveal in the selected heritage sites. The abundance of heterogeneous structures and forms coming from two different cultures and the manifestations of contemporary activities make it difficult to recognise elements essential for identity, meanings, and finally, future spatial improvements. Hence, on-site study tours seem to significantly ease this aspect of the preparation phase of the future design.

4. Recognising the aspirations and expectations of the space users.

Public space usually plays many functions and roles; the mixture of uses changes over time and is influenced by spatial changes in the environment. Therefore, each architectural and urban intervention requires examining the expectations and aspirations of the public space users - both current and potential - beforehand. In such research, several methods can be used, such as field observation, e.g. at selected times of the day and seasons of the year, questionnaire and focus studies optionally demonstrating elements of design concepts or sample solutions. In this case, the opinions of people who have already visited a site may have the most significant information value. On the other hand, on-line questionnaires can include questions about aspirations. This method works best when the place is known and famous, and the respondents plan to visit it.

Stage 3: Concept Project Elaboration and Presentation (Weeks 9-15)

After analysing and valorising the obtained results, students will elaborate on their final urban design concept with the selected details.

Presentation and discussion on the design concepts will reveal the potentials of teamwork, IT technologies and problems of distance design when the personal experience of the space is missing.

PILOT STUDY: THREE SQUARES IN KRAKÓW, POLAND

Aims of the Study

The pilot study aimed to check to what extent remote and hybrid learning brings satisfactory results, which tasks can be successfully performed remotely, and which require the student's contact with the study area. Before starting the pilot project, the course instructors formulated the main tasks and expected results that students should achieve on an urban and architectural scale for each selected location. Brief characteristics of the core design values in architectural and urban scales for each chosen location are included in Table 2.

Table 2: Characteristics to be demonstrated in students' projects referring to the history and heritage values of the selected sites, as envisaged by the author.

Site	Expected characteristics/forms referring to the history and heritage of the selected sites	
	Architectural	Urban
Szeroka Street	Architectural forms attempting to create a new dominant image for the urban space of the square	Urban composition underlining multi-layered heritage objects of different scales: multi-axes as the predominant layout type
Nowy Square	Limiting the scale of architectural interventions and searching for neutral forms	Urban layout subordinating new forms to the heritage fabric and acceptance of the square existing dominant form
Wolnica Square	Searching for high quality sustainable architecture and forms providing transparency effects	Functional zoning of the square as a result of traffic characteristics of the area.

The task consisted of two parts: urban analysis and design. On the selected sites, viz. three important places in the heart of the former Jewish district, Kazimierz in Kraków, Poland, students attempted to rearrange a multifunctional urban interior with dominant pedestrian functions with respect to the neighbouring area.

The analysis phase included historical, compositional, functional and physiognomic elements. It showed the advantages and disadvantages of the selected site's strengths and weaknesses. Students also tried to identify tangible and intangible heritage traces, and were asked to decide on their implementation in the design projects. Understanding the identity and the sense of place was also part of this study. The description of stages determined the procedure for the workshop. Students worked entirely remotely in the pilot study; consultations and reviews of results were also held in this form. Not all didactic methods envisaged for the programme presented in Table 1, and the individual stages could be conducted remotely.

Based on the description of the project's expected results, the instructors distinguished the following four categories according to which individual projects developed during the pilot study were assessed:

- 1) heritage values;
- 2) urban context;
- 3) architectural context;
- 4) specificity of the location.

Table 3 shows the assessment results obtained by a group of international students. It is worth underlining that similar results were obtained by Polish students completing the same course. Some of them, Kraków residents, could visit the site when completing the project, but without the teacher and on-site instructions.

Table 3: Pilot study results: quality of student designs referring to the history, context and specificity of the chosen locations.

Criterion	Pilot study: number of projects			Accuracy of interpretation of the design conditions (urban analysis) and their translation into the architectural design								
				High			Medium			Low		
	S	N	W	S	N	W	S	N	W	S	N	W
	3	3	4									
Heritage values				3	2	3	-	1	-	-	-	1
Urban context				1	1	1	1	1	1	1	1	2
Architectural context				3	3	3	-	-	1	-	-	-
Specificity of location				1	1	1	1	1	2	1	1	1

Legend: S: Szeroka Street, N: Nowy Square, W: Wolnica Square.

Table 3 shows that on-line study brought satisfactory results in two categories: underlining heritage values and respect to the architectural context. Unfortunately, based on the on-line data and materials, it was difficult for the students to achieve satisfactory results in the urban dimension of the project. In most of the projects completed, the specificity of location and the urban context were not sufficiently recognised and taken into account. Revisiting the programme and focusing on the stages related to obtaining and discussing data and proposing a hybrid teaching form may fill in this gap.

CONCLUSIONS

This article aimed to review the procedure of teaching studio design in the post-Covid-19 conditions. It proposed a workshop on a challenging subject of architectural and urban interventions on heritage sites in two countries of different but related cultures. Team collaboration of students and participants in the pilot study have helped to uncover both the potentials and threats of designing from afar.

In conclusion, it can be stated that the conscious setting of goals, the logical order of actions and the synergy of common efforts may balance the lack of personal presence on the site. The proposal and the pilot study results also show what elements/stages of the workshop require special attention and more time than traditional on-site teaching methods.

Changes in architecture and architectural education must follow the time-honoured transition of the contemporary world. Mindful observation and accurate reaction to this transition will help people adapt to, and take advantage of, new technologies without losing essential human and heritage values.

REFERENCES

1. Bialik, M. and Fadel, C., *Skills for the 21st Century: What Should Students Learn?* Center for Curriculum Redesign, Boston, Massachusetts (2015), 15 March 2021, https://www.researchgate.net/publication/318681750_Skills_for_the_21st_Century_What_Should_Students_Learn
2. De Millo, R., *Looking to 2040: Anticipating the Future of Higher Education* (2018), 10 February 2021, https://evollution.com/revenue-streams/market_opportunities/looking-to-2040-anticipating-the-future-of-higher-education/
3. *The Top 6 Technology Innovations for Education* (2021), 30 March 2021, <https://www.theamegroup.com/top-6-technology-innovations-education/>
4. Schleicher, A., *What will Education Look Like in 20 years? Here are 4 Scenarios* (2021), 15 February 2021, <https://www.weforum.org/agenda/2021/01/future-of-education-4-scenarios/>
5. Azhar, A. and Rees, G., *How Universities can Move Society Forward Post-Pandemic. 5 Drivers of Academia's Future* by the HBP Editors (2021), 15 April 2021, <https://hbsp.harvard.edu/inspiring-minds/how-universities-can-move-society-forward-post-pandemic>.
6. Czafk, M., Puškár, B. and Vráblová, E., *Conceptual - contextual thinking in architectural education. Global J. of Engng. Educ.*, 23, 2, 106-111 (2021).

7. Marzano, G., Place Attachment and Place Identity: their Contribution to Place Branding (2015), 15 November 2020, https://www.academia.edu/20133477/Place_Attachment_and_Place_Identity_Their_Contribution_to_Place_Branding
8. Jaśkiewicz, M., Place attachment, place identity and aesthetic appraisal of urban landscape. *Polish Psychological Bulletin*, 46, 4, 573-578 (2015).
9. Shestakov, A.A., Cultural Code Concept in Contemporary World. Department of Public Administration and Organizational Theory Bergen University (2008), 10 March 2021, <https://core.ac.uk/download/pdf/30925864.pdf>
10. Grycel, J., Detal architektoniczny jako element kodu kulturowego. Architectural detail as an element of the cultural code. *Czasopismo Techniczne. Architektura*, 109, 5-A/2, 179-183 (2012) (in Polish).