



Delft University of Technology

Education for the resilient city – teaching and learning urban design and planning in COVID-19 times

Rooij, R.M.; Rocco, Roberto ; Hausleitner, B.; Newton, C.E.L.; Aalbers, K.P.M.

DOI

[10.1680/jurdp.20.00052](https://doi.org/10.1680/jurdp.20.00052)

Publication date

2020

Document Version

Final published version

Published in

Proceedings of the ICE - Urban Design and Planning

Citation (APA)

Rooij, R. M., Rocco, R., Hausleitner, B., Newton, C. E. L., & Aalbers, K. P. M. (2020). Education for the resilient city – teaching and learning urban design and planning in COVID-19 times. *Proceedings of the ICE - Urban Design and Planning*, 173(4), 119-124. Article 2000052. <https://doi.org/10.1680/jurdp.20.00052>

Important note

To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

Green Open Access added to TU Delft Institutional Repository

'You share, we take care!' - Taverne project

<https://www.openaccess.nl/en/you-share-we-take-care>

Otherwise as indicated in the copyright section: the publisher is the copyright holder of this work and the author uses the Dutch legislation to make this work public.

Cite this article

Rooij R, Aalbers K, Hausleitner B, Newton C and Rocco R (2020)
Education for the resilient city – teaching and learning urban design and planning
in Covid-19 times.
Proceedings of the Institution of Civil Engineers – Urban Design and Planning **173**(4):
119–124, <https://doi.org/10.1680/jurdp.20.00052>

Research Article

Paper 2000052
Received 30/06/2020;
Accepted 04/08/2020;
Published online 08/09/2020

Keywords: design methods & aids/
education & training/social impact

ICE Publishing: All rights reserved

Education for the resilient city – teaching and learning urban design and planning in Covid-19 times

Remon Rooij PhD

Associate Professor, Department of Urbanism, Delft University of Technology, Delft, the Netherlands (Orcid:0000-0002-2784-1892)
(corresponding author: r.m.rooij@tudelft.nl)

Kristel Aalbers MSc

Lecturer, Department of Urbanism, Delft University of Technology, Delft, the Netherlands

Birgit Hausleitner MSc

Lecturer, Department of Urbanism, Delft University of Technology, Delft, the Netherlands (Orcid:0000-0002-9409-4620)

Caroline Newton PhD

Associate Professor, Department of Urbanism, Delft University of Technology, Delft, the Netherlands

Roberto Rocco PhD

Associate Professor, Department of Urbanism, Delft University of Technology, Delft, the Netherlands

This article describes the TU Delft's 2020 experiences during the pandemic in teaching and learning urban design and planning for (post-)Covid-19 times. The article presents the view why, that and how the themes of spatial resilience and governance resilience should be emphasized in urbanism curriculums. Additionally, it discusses the value of creating well-organized and empathetic online design studios as an inspiring learning environment for both student and teacher.

1. Introduction

The outbreak of the coronavirus disease 2019 (Covid-19) has impacted and will continue to impact urban design and planning education in terms of both contents and pedagogy. In early spring 2020, students and academic staff all over the world were forced into a transition from (almost) fully on-campus education to an online education. However, the pandemic has also brought forward (or back) older, more fundamental questions on teaching and learning. Questions like ‘are we teaching urban design and planning students the right things and in the right way to face the urgent challenges of our world?’. In this paper, an overview on the impact of the Covid-19 outbreak on TU Delft urban design and planning education, for now and in the future is presented. For us, ‘Corona times’ have been a magnifying glass that has helped one to critically reflect on curriculums, course content priorities and pedagogical approaches. Since March 2020, there have been many moments of evaluation and reflection among (post-)master students and teaching staff about learning and teaching experiences, both online and on campus. The insights of these discussions provide the fundamentals of this paper.

This paper starts off by introducing the importance of educating future urbanists in thinking and working in terms of resilience and sustainability: most especially spatial resilience and governance resilience. Additionally, this paper elaborates on a number of pedagogical and organisational considerations, based on the experiences of both students and

teaching staff during corona times. Finally, a brief agenda to open up the discussion more widely is presented, focusing on the future of urban design and planning education in post-corona times.

2. Spatial resilience

The pandemic puts in question and challenges the city at large, the neighbourhood and the urban block and dwelling. It makes people rethink the availability and functionality of the public and private realms and spaces. The crisis actually amplified a debate that was started already before the pandemic: the scale of mixed-use (Hausleitner, 2019; Hill, 2020), sustainable mobility (Newman *et al.*, 2017) and the meaning of public space (Carmona, 2015; Mehta, 2014).

People usually do not live (anymore) in, or very close to the places they work; they depend on the functioning of poly-centric city regions. The reach of individuals was extremely restricted during the phase of lockdown, and there is a threat of a move towards more individual motorised mobility, again. While many cities aim for more walkable streets, free space for bicycle lanes, and reduced space for cars, individuals choose motorised individual modes of travel over public transport to reduce the risk for infection. On the neighbourhood scale, the question of availability of goods for daily needs in a walkable distance became central. Many residential neighbourhoods do not facilitate economic life or leisure activities in a walkable distance anymore. This state requires a rethinking of how neighbourhoods could become more mixed-use and how

central neighbourhood streets could be strengthened as sub-centres of daily life. The crisis also made it clear that citizens often depend on larger metropolitan parks and that neighbourhoods too often do not have sufficient public green. Thirdly, the pandemic also put in question the urban dwelling and block. A large share of dwellings in the city does not have private outdoor spaces, and many urban blocks do not facilitate work beyond the home office. Diverse types of work spaces integrated on the neighbourhood scale could allow for professional exchange or quiet work environments, but also facilitate work besides office jobs, for example spaces for crafts companies, which cannot be carried out from home.

The post-pandemic urbanism curriculum needs to equip students with sound strategies for adapting the neighbourhood, city and city region to become more resilient towards possible future pandemics and other unexpected events; and this task is a multi-scalar one. It has to be integrally approached, thinking from the architectural to the neighbourhood, the city and the metropolitan scale, building up redundancies between the scales, increasing multifunctionality and preparing for change.

3. Governance resilience

The Covid-19 pandemic demands new ways of inhabiting the city (Figure 1), in which citizens are asked not to congregate in large numbers, to keep distance from each other, and to physically isolate themselves when not feeling healthy. However, what does that mean for civic life? The urgent public challenges that existed before the pandemic are still with us: climate change, excessive reliance on fossil fuels, growing inequality, democratic erosion. These are just a few of those public challenges that need to be discussed in the public realm. Is it possible to recreate this public realm online? Who will be excluded from the conversation then? Being physically present in the public spaces of the city has a huge impact on how one perceives, tolerates, accepts and develops appreciation for others who are different from us, and about whom we generally know very little. For cities to be socially resilient, new forms of inclusive interaction, discovery and debate must emerge, in which citizens from all walks of life can interact and give input to how their cities are planned, designed and managed. Socio-spatial exclusion and fragmentation were already a problem before the pandemic, so the new urban



Figure 1. Illustrations: (a) Appropriation of commercial space during the first restrictive phase in the Netherlands, (b) increased space for commercial use in the phase of re-organisation of public life – the restaurant taking an increased share of public space, (c) places to stay following social distancing in a park, (d) corona inspired public furniture installation, (e) reorganisation of pedestrian flows in shopping streets and (f) increasing value of semi-private outdoor spaces and pedestrian-friendly streets in Covid-19 times (source: all illustrations by B. Hausleitner, except (c) by T. Bacchin)

normal should focus on inclusion and justice. These are crucial elements for socially resilient cities, as justice and inclusion increase policy and design suitability and accountability, and boost citizens' acceptance, support and compliance. Besides, it has been widely observed that urban exclusion and fragmentation accentuate the effects of the pandemic. Vulnerable populations are disproportionately affected by the pandemic. However, those dimensions of sustainability and resilience are notably absent from spatial planning and design education in most places, as curriculums around the world focus mainly on environmental and economic aspects, as observed in a study with UN-Habitat in promoting the New Urban Agenda and the Agenda 2030 (Rocco, 2017). Inclusion of socio-spatial justice (or 'spatial justice') in planning and design curriculums is even more urgent post-Covid-19 pandemic.

The same considerations may apply to the classroom: the absence of (physical) contact with other students who are different and diverse in online environments may produce the false idea of uniformity and homogeneity. The richness of the classroom may easily be lost in online environments, with dire consequences for how students perceive, understand and deal with those who are different from them, ultimately affecting their ability to deal with diversity and difference in the city.

3.1 Urbanism pedagogies: research and design

The core of the Delft urbanism education consists of *research and design studios*. In both the explorative phase of the design

project and in the actual design stage the integration of new ways of blended working and learning proves relevant. Blended learning combines onsite and online learning, and while some students could still explore their study areas physically, many were confined to 'GoogleMap walks'. Teaching practices demonstrated that this online – onsite experience can easily be improved using both new and innovative research and design methods, such as the use of virtual reality equipment to enhance the immersive experiences. In addition, observational drawing by hand of the scenes encountered on the walks (physical or virtual) enabled students to develop a critique of reality in a visual and haptic manner (Figure 2). Embodied cognition theory emphasises that learning occurs through an interplay of body (constituting the physical body and the senses) and mind. So even in settings in which online teaching predominates, one needs to look for ways to integrate some sort of physical (inter)action in order to significantly enhance learning (Kosmas *et al.*, 2019).

By their very nature, planning and design activities are tailored for 'futures education', translated in the way design and research studios are developed at schools. Futures education allows students to analyse reality, reflect critically on the problems and challenges faced by a community or society at large, and to improve their problem-solving skills, while developing visions and designs for desirable and possible futures. The development of shared visions for a desired future is coupled with back casting that allows students to imagine

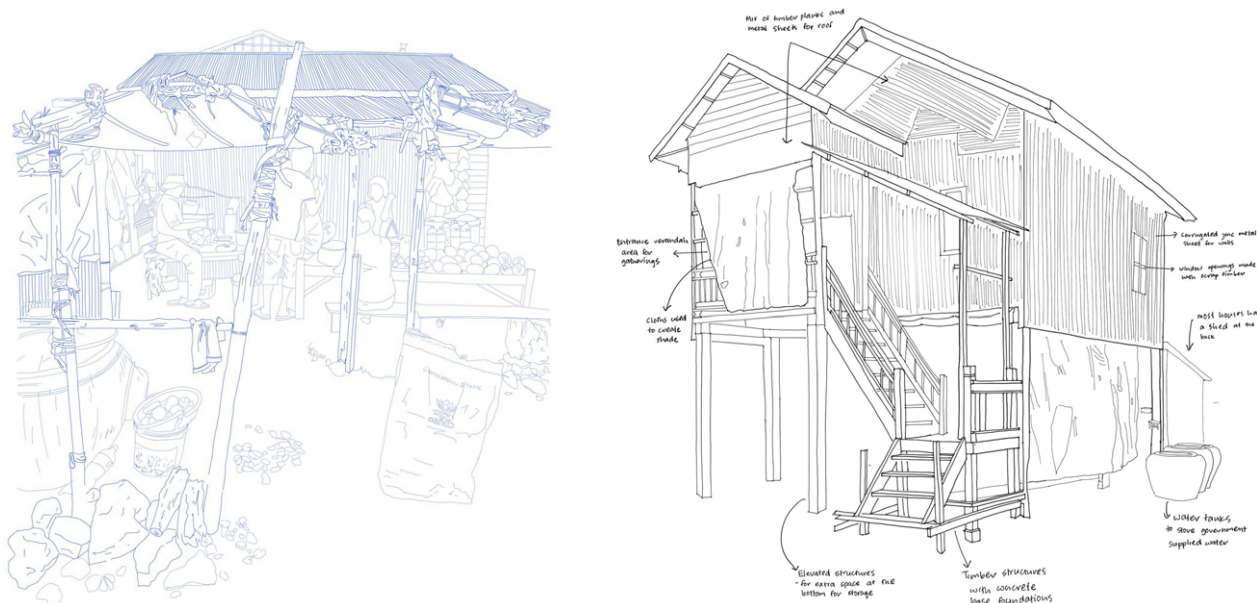


Figure 2. Observational drawings of housing types and shops on GoogleWalks through the city of Srei Sophon (Cambodia) (source: drawings by Leen CLaessens and Mahishini Vasudevan)

the steps necessary to achieve those visions (Robinson, 1990). Back casting is a method that allows co-design strategies. The greatest challenge in this type of approach is access to the relevant stakeholders, with whom shared visions and strategies should be formulated in partnership. Access to relevant stakeholders is not always possible in a physical studio setting, where time constraints and deadlines make it more difficult to manage complex participatory and co-design processes. Access to stakeholders online might be organised more easily, but evidently has its constraints and limitations.

4. Student experiences

One can be proud of the resilience and flexibility the higher education sector has demonstrated in most places, although students in certain parts of the Global South are significantly held back in case of lack of access to computers and good internet connections. However, if online education is continued in the near future – because one has to, or in the longer run – because one wants to, one will need to look for ways to safeguard student's well-being, and this will undoubtedly mean providing time and space for offline gathering and exchange. Additionally, one should also understand very well that the academic student experience goes far beyond well-organised online classes and studios. The academic environment is to a large extent built on informal, bottom-up and student-led initiatives, meetings, guest lectures, seminars and events and spontaneous exchanges that cannot be planned. What is so easily done for, with and by students on campus, is hard to copy online – one observes. This is a big surprise to many, as these students are supposed to be the so-called digital natives.

Previous studies have already pointed out that lack of social support and the amount of stress students are confronted with seriously impact their well-being. Natvig *et al.* (2003) found that group work class discussions and verbal interactions tend to decrease the overall experience of stress and positively impacts the feeling of social support. Studio education can generally benefit from precisely this large amount of personal interaction with both peers and teachers, and provides the feeling of social support that is needed. In times of Covid-19 lockdown, international students are condemned to being walled up in their small studio rooms with many worries about their families and situation back home. Suddenly, their interactions became more limited and some measures taken in order to deal with the pandemic impacted studio and group work in such a way that students' interactions with others were again severely limited. Although online support structures were set up very quickly in the case of the Netherlands (such as online studio teaching or studio Facebook and WhatsApp groups) these solutions are not capable of providing the much-needed emotional and personal support students need, nor reduce the stress they are experiencing.

5. Delft urbanism student quotes on the transition towards online education (A&BE, 2020)

On the relation on campus – online education

'A positive point of the transition was that we got better structured meetings, and they were more to the point.'

'Online lectures were sometimes clearer and easier to understand acoustically.'

On preparation and focus of sessions

'What was helpful ... were the announcements and emails provided before about the online sessions, including information on the session (time, password etc.) as well as information on the contents and the things that could be prepared.'

On empathy, motivation and the 'fun' factor

'I think the teachers did excellent in the transition to online education. It was even possible to follow online courses when the faculty was not closed yet, as well as that there was a mutual understanding for the difficulty of the situation.'

'The lectures were still very interesting and with a human touch.'

'Teachers spread a positive mood and encouraged students very well. The quality of the academic work stayed very high.'

'Try to keep the classes interactive! Especially since we are all socially isolated I think it is very important and motivating to really discuss, debate, etc. during the classes. It helps with motivation and attention span.'

6. Teachers' experiences

After the initial chaos of having to move to online education, teachers have experimented with several online platforms. However, while these platforms are suitable for meetings and discussions – perhaps sometimes even better than the physical setting, as everybody listens better to one other – they very often are not equipped to efficiently support design teaching, which would need for example high-resolution visualisation tools.

Teachers 'complain' to each other and the educational management that everything takes more time and more energy (Manyu, 2020). Mentors are asked to better structure, motivate, even entertain students to keep them on board. Teachers (and students as well) seem to quite easily lose their sense of time, and 'forget' to schedule the much-needed breaks necessary for mental and physical recovery both at micro level

(the day schedule) and meso level (week/month/quarter). New assessment strategies need to be developed and discussed more intensively with programme leaders and the board of examiners. The sometimes hidden, sometimes explicit promise that online/blended education would or could save time (for teachers) has become a fairy tale for many in the Delft community.

7. Synthesis: education for the city needed

The teaching experience forced on both students and teachers during the Covid-19 lockdown has literally demanded increased awareness and reflection on teaching practices and the critical re-assessment of the (until then) almost natural and gradual evolution towards blended learning. The experience has shown that a complete virtual learning environment comes with numerous challenges and caveats that limit the learning experience.

Group and peer learning are encouraged, and rightly so. This does not only teach students to collaborate with people that are different, it also fosters understanding for different viewpoints and values, and teaches how to agree and disagree in a constructive manner. In the on-campus environment, this group work is a truly experiential practice, often triggering insights and curiosity in subtle ways. This more informal way of learning is difficult in an online setting. Interestingly, however, one observes that some students who were previously more introverted in on-campus settings, are far more confident in an online setting. Additionally, one sees that some preparatory tasks are done more thoroughly online, and that several presentation and discussion activities are carried out with more discipline. These changes in dynamics are interesting and worth investing in, as they reveal students' different personalities and differences in personal learning experiences.

The authors thus make a plea for a further exploration of blended learning settings, in which the benefits of both on-campus and online experiences are used to the fullest. From experience the authors highlight three elements that need attention:

- (a) Offering a clear structure is crucial. While in an on-campus setting, clarity and guidance can be offered on a week-to-week basis, more thoroughly prepared guidelines on session, day, week and quarter/semester levels are needed for a comfortable online learning experience.
- (b) The second imperative should be to create an atmosphere of empathy. In on-campus situations subtle hints and body language are clues for teachers to have an extra chat with students and to enquire about their well-being. In online settings, however, this needs to be structured in more 'formal' ways. Carving out time to address students

by their names, to ask about their week, to inquire on the cat that jumps on the desk or the guitar in the background, are ways to create empathy online. There is no need to sugar coat online education and the experience created by the pandemic, but it helps to acknowledge all are together. Alongside the offered structure, empathy creates a safe learning environment.

- (c) While the first two points address the process and the social, the safe environment they create are imperative for a proper delivery of the content. In the end education is about acquiring knowledge and skills, about becoming a master in a certain field. Priority should thus be given to content-rich experiences that are also engaging. In this paper, the authors made a plea for a focus on spatial and governance resilience: multi-scalar, integral, multifunctional, with inclusive interaction, just decision making, and being prepared for socio-spatial change.

Both on-campus and online content needs to be delivered in an engaging way. The current crisis has taught that delivering online content-rich sessions is a challenge, but it has also taught that plenty of tools are available to offer enough variety in the delivery of that content, and it does not always need to be just about 'fun'. It became clear that there is a need for content-rich sessions that engage students because the subject is interesting. In on-campus settings the lack of structure (point 1) can be compensated by motivation and enthusiasm, but enthusiasm cannot hide the lack of content, and that has become plainly clear in online settings.

REFERENCES

- A&BE (Architecture & the Built Environment) (2020) *Quarter 3 2019 –2020 Questionnaire Results*. Quality Assurance Agency, Faculty Architecture & the Built Environment, Delft University of Technology, Delft, the Netherlands.
- Carmona M (2015) Re-theorising contemporary public space: a new narrative and a new normative. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* **8**(4): 373–405. <https://doi.org/10.1080/17549175.2014.909518>.
- Hausleitner B (2019) Mixed-use city: configurational conditions from urban street network to building plot. In: *DASH Home Work City*. Nai 010 Publishers, Rotterdam, the Netherlands.
- Hill AV (ed.) (2020) *Foundries of the Future: A Guide to 21st Century Cities of Making*. With contributions by: Ben Croxford, Teresa Domenech, Birgit Hausleitner, Adrian Vickery Hill, Han Meyer, Alexandre Orban, Victor Muñoz Sanz, Fabio Vanin and Josie Warden. TU Delft Open, Delft, the Netherlands.
- Kosmas P, Ioannou A and Zaphiris P (2019) Implementing embodied learning in the classroom: effects on children's memory and language skills. *Educational Media International* **56**(1): 59–74. <https://doi.org/10.1080/09523987.2018.1547948>.
- Manyu J (2020) *The Reason Zoom Calls Drain Your Energy*. BBC, London, UK. See <https://www.bbc.com/worklife/article/20200421-why-zoom-video-chats-are-so-exhausting> (accessed 30 June 2020).

- Mehta V (2014) Evaluating public space. *Journal of Urban Design* **19**(1): 53–88, <https://doi.org/10.1080/13574809.2013.854698>.
- Natvig GK, Albrektsen G and Qvarnström U (2003) Methods of teaching and class participation in relation to perceived social support and stress: modifiable factors for improving health and wellbeing among students. *Educational Psychology* **23**(3): 261–274, <https://doi.org/10.1080/0144341032000060101>.
- Newman P, Beatley T and Boyer H. (2017) Create sustainable mobility systems. In *Resilient Cities: Overcoming Fossil Fuel Dependence*.

- Island Press/Center for Resource Economics, Washington, DC, USA, pp. 53–87. https://doi.org/10.5822/978-1-61091-686-8_3.
- Robinson JB (1990) Futures under glass: a recipe for people who hate to predict. *Futures* **22**(8), 820–842.
- Rocco R (2017) *Education for the City we Need: Exploring how to Integrate the UN-Habitat New Urban Agenda in Higher Education Curriculums*. Delft University, Delft, the Netherlands. See https://issuu.com/home/published/utc_2017_exec_report.

How can you contribute?

To discuss this paper, please email up to 500 words to the editor at journals@ice.org.uk. Your contribution will be forwarded to the author(s) for a reply and, if considered appropriate by the editorial board, it will be published as discussion in a future issue of the journal.

Proceedings journals rely entirely on contributions from the civil engineering profession (and allied disciplines). Information about how to submit your paper online is available at www.icevirtuallibrary.com/page/authors, where you will also find detailed author guidelines.