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Open Urban Design: An Explorative Review on Urban Design Studio

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Abstract

The gap between creativity and rationality in the field of architecture and urban design in the architecture school's studio is attempted to be explored through studio experimentation. A class experimentation entitled Open Urban Design Studio was conducted involving fifteen students of Department of Architecture Faculty of Civil Engineering and Planning, Universitas Islam Indonesia. Two questions to be explored were: is there any new thinking that arises from studio experimentation in interpreting open urban design? What is the role of learning in the context of open urban design? The experimentation showed that open urban design may be a new concept to open a broader understanding of urban design. It is able to reach the concept of openness, starting from the physics (open building), the design process (open design), to democratic aspirations (open city). Students' works show there are three genres in open urban design to propose, namely: (1) Urban invitation that gives opportunity for the society to build narration; (2) Urban frame that diminishes the barrier between architecture and infrastructure to create new variations of life-settings; and (3) Urban parts that forms a codified urban element allowing the citizens to plug in the city system.

Keywords: open building; open design; open city; studio; open urban design

1. Open Urban Design in the Curriculum: Introduction

Many discussions on curriculum in architecture education focus on the lack of education in providing support for professional practice. This criticism gets stronger with a claim that in architecture education, the focus is too much directed towards pursuing the form solely rather than the process of learning what is needed by the society. There are many arguments for why this occurs. One that is considered as the root of the problem is a lack of balance between rationality and creativity in the studio at the architecture schools. Such argument is emphasized by Fathi Bashier in his survey on some discourses regarding design thinking (2014). Some efforts were also done anatomize the integration of those two domains such as done by Salama (2008). However, this issue does not seem to end in the integration alone because the dimension of the problem continues to grow and is very contextual.

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In the context of Indonesia, the manifestation of this dualistic perspective has an impact on student learning as well. Students are often too focused on building design alone and too normative in designing based on functionalist approach i.e. simply transfering users' needs into architectural programs. This over emphasize on building design leaves urban design little attention. The need, history and character of the urban area and the community surrounding are also often left unexplore adequately. The impact is that urban design becomes "nobody business." Such thing is still the learning tradition in Indonesia which also affects - or even becomes the cause of - the professional tradition. There is a general understanding that the professional practice of architecture in Indonesia still limits itself to building design expressed in the 13 Competencies of Indonesian Institute of Architects (http://www.iai.or.id/sertifikasi/13kompetensi). Urban design becomes an arena outside of architecture. In education, urban design is even treated as a study program that is outside of architecture as it is placed in the domain of urban planning. The position is surely contradict with the general notion that urban design is one of the specializations in architecture as indicated by the International Union of Architects (UIA) in the document "UIA and Architectural Education, Reflections and Recommendations" published by Architectural Education Commission in the XXIIth UIA General Assembly in Berlin (2002).

This myopic condition becomes very contradictory to the problems faced by the cities in Indonesia. Indonesian urbanism is the ground of informality issues such as ones elaborated by Roy (2005) and non-urban urbanism that dominate the spatial production as reported by the author and Winisudaningtyas in a previous study (2012). On the other hand, cities are now required to be more sustainable amidst rapid growth and complexity such as indicacted by Sustainable Development Goals indicators. According to what Batty (2011) believes, designing a city in this new post-urbanization culture requires a science of cities (http://www.complexcity.info/). In this new science, the science of complexity is necessary to understand the city. New tools such as scaling, fractals and simulation models are being developed rapidly (https://jmichaelbatty.wordpress.com/). Information technology, hence, becomes very important and vital in understanding as well as in spatial intervention such as smart city offered by Batty et. al. (2012).

As this new science continues to grow, the science of openness also grows and opennes in architecture has also its momentum. Re-interpretation of open building which was originally proposed by Habraken (1972) is fostered by the logic of open source in information technology. Formerly it is limited to the separation between support and detachable unit in term of their authority. This separation opens a wide range of possibilities such as Wikihouse (http://www.architecture00.net/wikihouse/) or 3D printing architecture (https://www.dezeen.com/2013/05/21/3d-printing-architecture-print-shift/). A conference entitled The Future of Open Building Conference has given a wide coverage on this subject (http://www.openbuilding2015.arch.ethz.ch/conference-proceedings.html). Several parties try to link open building with data technology. Warwick Institute for the Science of Cities, for example, concentrates more on how big data are a part of an effective and efficient delivery service in keeping its citizens healthy, safe and prosperous (http://www.wisc.warwick.ac.uk/).

Such a broad understanding of "architecture" is very challenging for the functionalist tradition that has so far been taught, at least in the learning process of architecture in Indonesia. Thus, teaching urban design is a challenge in itself not only how to teach urban design but also how the science of cities in Indonesia's context - an open urban design – should be learned by students. This is the question we should explored in this paper. In the context of the substantive theory of urban design, are there any new thoughts that arise from the studio experimentation in interpreting open urban design? In the context of learning method, how is the design thinking in the context of open urban design?

2. Open Building, Open Design, and Open City

Before answering the above questions through studio experiment, it is necessary to look back on "openness" embedded in open building, open design, and open city.

The terminology of open building started to develop in architecture as early as when John Habraken developed his theory in his book entitled *Supports: An Alternative to Mass Housing* (1972). In Habraken's thinking, a built environment (building is one of them) is not a process that stops as construction process completes. Open building is closely related to the fundamental idea of the making of environment that contains several principles. The first is the concept of multi-levels of intervention that are represented in the form of support (the base building or basic infrastructure) and infill (parts of buildings that can be added apart from the base building). This multi-levels are also visible in the interventions at the architectural and urban design levels. The second is the idea that users or any related actors, including professionals, can contribute to the decision-making of design process. The third is that there is a technical solution that becomes the interface among systems allowing replacement of one system with another system as long as the systems have the same roles and functions that can be applied in the base building into a fitting-out process (adjustment of certain functional designs into the structure of the base building). The fourth is the idea that the built environment is an entity that is in a continuous transformation and that change must be well-understood and well-recognized. The built environment is the product of a continuous design process, a constantly changing product that transforms little by little and part by part (http://www.habraken.com/html/introduction.htm). Habraken also combines a lot of advanced thinking that is currently accepted both in the field of research and practice, at the level of architecture, urbanism as well as in social sciences such as designing for openness, which not only takes care of capacity but also inclusivity (open city, in the concept of Richard Sennett, which will be elaborated below). Open building also opens the influence of actors to participate in each process, challenges the design process (open design) and the construction process until there is a transformation of the properties of the built environment.

The important principle of open building in architectural discourse lies in the understanding that the built environment is composed of various structural levels linked in complex networks. Each has an organization and actors (authority) who are responsible and often interrelated. The effort to understand this structure is important as the first step in designing the built environment so as to make room for changes to become smart structures and actors. These levels of structure will also vary in terms of the duration of work and development. In a more operational discourse, open building breaks down a settlement starting from the road and landscape, house structures, fillers, and furniture with their different life span and authority respectively. Open building continues to develop with a variety of cases and has become a worldwide network of research and practitioner community as seen on Open-building.org (Kendall, 2015). The design exploration related to this strategy which is very well-known in Indonesia is done by Prof. Johan Silas for the Sombo flats in Surabaya.

Open building when associated with information technology and image has made all people to have potential to become a designer as mentioned by van Abel (2011). This opens a wider discourse of open design. Open Design grows in a similar way to that of open source in information technology. Design is, therefore, built based on information that is open for participation. The principle that previously applied only in computer programming is then being implemented in physical design. It opens also a new discourse on real time architecture and urban design that respond to the changes and dynamics of a society. Bas van Abel in his book Open Design Now reveals that the conveniences offered by information technology have eliminated the need for special skills that a designer had to have in order to produce a particular design product. Indeed, there are some aspect that could survive for example in the aspect of aesthetic sensitivity as mentioned by van Abel (2011). But further, the open design approach embedded with information technology provides also instruments that allow one to be a "one-man factory." He or she is capable of becoming a world designer from a room like what Kendall illustrates (2015).

Michel Bauwens, in his publication entitled "The Emergence of Open Design and Open Manufacturing"

(Bauwens, n.d), points out that internet make it possible for peer production. It is a new form of production with permission-less self-aggregation. This form begins to replace the more rigid state-owned production resources, turning some market-based capitalism into a cooperative that allows workers and members to have shared capital. He distinguishes three different dimensions of open design as follows. (a) Input side refers to the contributors who voluntarily participate; sometimes they could even contribute without permission because there is no copyright involved. With such activism model, a design will be freely modified (peer production). (b) Process side refers to inclusive principle design; with as few obstacles to participate as possible; with pieces of task that are modular rather than functional job. In the process, there is also a communal quality validation (peer governance). (c) Output side can create an open space; even though with license, so that its value is available for all. Such open output will eventually open up a new layer of open and free material that can be used for further processing (Bauwens, n.d).

Being similar to the concept of open building and open design, the idea of open city appeared by Richard Sennett in the early pre-publication of his upcoming book "Building and Dwelling" (http://www.richardsennett.com/). From the publications on Sennet's web, the core of open city is the understanding that a city is a democratic expression that is not merely at the legal level but as a physical experience. Sennet challenged architects and urban designers with fundamental questions such as how to build a sense of relatedness among strangers? How to bridge the inside and outside? and so forth. The concept of open city leads us to the importance of developing process that is not as a competition but as a way to seek for dynamic relation between "equilibrium and disequilibrium". Sennet believes that cities that are based on a rigid closed system will diminish.

In a more prescriptive meaning, Sennet indicates the three systemic elements of open city, namely 1. passage territories; 2. incomplete form; 3. development narratives. These will be briefly described here. The first is to build ambiguous border. Open cities are not fortified yet they have membranes that keep anything precious and let others. The walls should be porous and resistant. The second is the incomplete form which can be defined as the architecture that is designed so as to be added and revised in the future according to the development. Architecture is not seen as a finished building but a stimulation for the development of its surroundings. The third is in the development narrative that opens the interaction among "organisms" with different functions to work and interact. Building a city is more as open systems in mathematics and the natural world, should embrace non-linear forms of sequence. Sennet's conclusion regarding Open City as open system is "Closed means over-determined, balanced, integrated, linear. Open means incomplete, errant, conflictual, non-linear. The closed city is full of boundaries and walls; The open city possesses more borders and membranes. The closed city can be designed and operated top-down; it is a city which belongs to the masters. The open city is a bottom-up place; it belongs to the people" (http://www.richardsennett.com/site/SENN/UploadedResources/The Open City.pdf). Sennett has provide more explanation on the contrast between closed and open design on his writing in Cities Paper's web (http://citiespapers.ssrc.org/open-and-closed-design).

In addition to the fundamental paradigmatic issues mentioned above, in the context of technological practice, the concept of open building, open design and open city requires framework for implementation. McGinley suggests a combination of building information modeling (BIM), geographical information system (GIS) and precint information modeling (PIM) that will provide a more effective working platform (2015).

3. Studio Experiment: Method

The Department of Architecture Faculty of Civil Engineering and Planning, Universitas Islam Indonesia, in order to educate its students to become architects, has developed Architecture Design Studio (ADS) from 1 to 7 which ends with Final Project and Studio Professional (SP) 1 and 2 for Professional Education. The studio is

comprehensively aimed at achieving the core learning objective leading to a bachelor degree in architectural studies. ADS 7, which became the focus of this paper, has 8 credits and is offered every academic year in odd semester. Based on Curriculum 2013, ADS 7 discusses the theories and practices of designing a built environment in the context of the region, especially the urban area. The class selected for the experiment was the class in the academic year 2015/2016.

For ADS 7, studios are designed with an emphasis on design approach variations that are expected to provide more opportunities for the students to explore the location context, design problem or typological solution which can then be developed in final project. The variations of design approach, among others is open design, will frame an independent effort undertaken by the students to capture the essence of the design process. The design approach is choosen by students themselves and at the same time they can get an understanding from other students who use different approaches. This is a participative learning effort where students learn from other students through the designed interaction. The design approach is also expected to enrich the students on the aspects of design techniques.

The ADS 7 studio supervised by the author was treated specifically to broaden the variations of open design interpretation at urban design level. Most of the design skills are tacit knowledge and hence there are weaknesses because the base is intuition. Compared to other disciplines that have been able to develop databases, sustainable research and valid methods, design seems to be at the beginning of developing foundation that is associated with the effort to make the tacit knowledge explicit in the contexts of methodology, analytical perspectives and results as revealed by Poggenpohl (2015). In this context, hence, it is necessary to conduct a review of student works that will show constructive efforts to reveal such tacit knowledge. It is also necessary view in order to answer the research question of this paper.

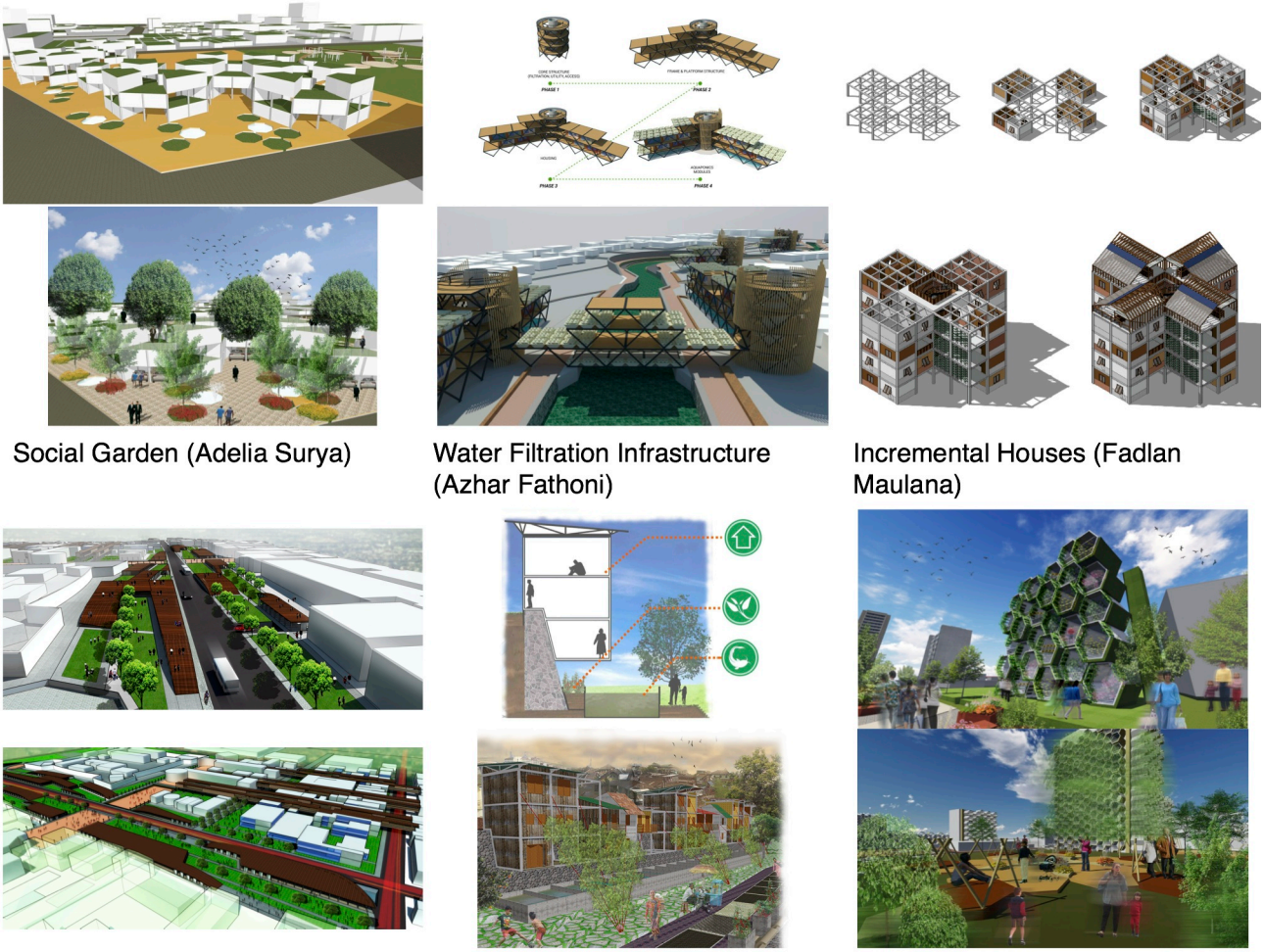
3. Open Urban Design: Result and Discussion

From fifteen works of students, six are identified giving strong expression of open urban design and then analysed to be grouped (Figure 1). The rests show lack of expression of its openness.

The first group of works shows dominant openness interpretation that is more on the genre of Sennet's "development narrative" and Bauwens' “open end products.” In the group, student designed the city by “inviting the community” to contribute and open up a new perspective on their role in urban intervention. Here, seen from the production mechanism initiated by Bauwens, the works emphasize more on the input side (urban actors) that is more dominant. Urban design is also designed as a project for conflict resolution primarily to resolve any surrounding environmental issues, including the conflicts of interest and authority among governmental levels (provinces and cities) and third parties claiming any customary ownership. The author names this genre "urban invitation.”

The second is the design of "architectural framework" which is an element of urban design but functions like infrastructure. This probably is like a base building at architectural level in the open building discourse of Habraken. The strategy used by the students is to merge certain functional compositions such as health care centers with cities' accessibility infrastructure so that it will become an integrated new area. Another example is to combine social activities of the society and softspace with infrastructure that tends to be a more fluid element of hardspace with a variety of functions. Roads are redesigned to be a more interactive place that brings together the community's various social activities. Another design is to use structural engineering in the form of hanging settlement done to add value for retaining wall of river which is also used as the foundation of the building on it. The author sees that this strategy then serves as an example for Sennet's implicit suggestion that cities need to build incomplete forms. City, or development of urban element shall give a dynamic encouragement between one element to another element. Perhaps, "walls" in Sennet's obscured

terminology can be interpreted as melting the barriers between architecture and city's infrastructure. Thus, when designing infrastructure, roads, canals or bridges, for example, it is necessary to open the opportunity for the emergence of new functions, such as urban garden or temporary residential area. Perhaps in this case, especially in Indonesia, the aspect of legality becomes an issue because the building permit system that is still disintegrated between types of those built environment.



Urban Invitation: developing open narrative in urban context | **Urban Frame: bluuring architecture and infrastructure** | **Urban Parts: peer urban production**

Fig. 1. Groups of students' work showing significant openness in urban design (courtesy of each students)

Such skepticism is still strong, for example, the rejection of the idea to occupy with housing the Bay Bridge that connects San Francisco to Oakland (https://www.treehugger.com/sustainable-product-design/bridges-are-for-people-inhabiting-the-bay-bridge.html). Similarly, collaboration among architects, urban designers, landscape designers and engineers who contribute to the development of urban infrastructure needs to always be improved in order to bring new venues for urban community's activities. However in general, the author argues that the genre of the emergence of "urban frame-structure" such as water filtration facilities of Azhar (Fig. 2) which is proposed as a frame for architecture in urban infrastructure needs to be developed further.

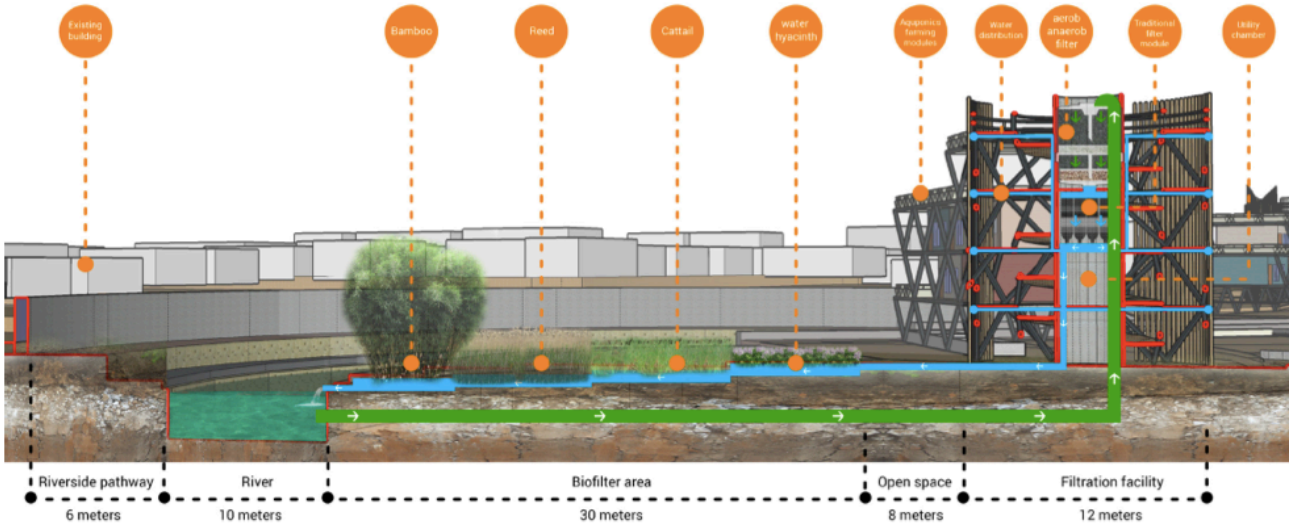


Fig. 2. Example of student's work: detailed concept of water filtration as urban infrastructure designed by Azhar Fathoni (courtesy of Azhar Fathoni)

The third is a design that focuses on the process of forming a codified city element or what the author calls as "urban parts." These sections are artifacts that lead to a sustainable and democratic urban development process, a peer-urban production a la Bauwens. The parts are technically codified with the modules specified and become a part of a more comprehensive development mechanism. Parts are also simultaneously designed as a physical entity that allows a sustainable multi-contributory urban development process. Society, through the understanding of such modular parts, can plug in to the urban system. The modular parts initiated by the students include the farming modules that makes urban farming easier. The author names it as an open urban design based on "urban-parts."

The three abovementioned groups of genres or strategies may become a discourse to promote the terminology of open urban design. The open urban design here becomes similar to a process of assembling by the society. This may also indicate a physical manifestation of the ontological framework of assemblage proposed by Deleuze and Guattari (1997) which, according to John Phillips, contains the definition of arrangement, fitting, or fixing (2006). The author has show the variations of such approach. Open urban design is indeed not a new discourse. DeZarteHond's page has indicated it and believed it can produce knowledge from both top and bottom and also stimulates participation (http://www.dezwartehond.nl/expertise/open_stedenbouw&lang=en_US).

In the context of learning, citing Lee Shulman, the president of the Carnegie Foundation for the Advancement of Teaching, there are six principles of communities of learners. First, learning is a generative and essential process for all disciplines. It will support the development of content, processes and transfers. Second, learning is very action-oriented and therefore learners are agents who should be active. Learning should be reflective; it should be aware of how and why someone learns in a special way and others learn in different ways. Learning is a collaborative activity that demands collaboration. Learning is the process of generating interest, by which ideas and processes will be shared among students and lecturers. Last, learning requires support; therefore it should be grown and legitimized within a community. Those are mentioned by Shulman (2004). Referring to the above six principles, the open urban design presented here is an exposition of how designing is explored through the studio community in a college. Students are able to learn about open design, open building and open city on one side as a separate concept. However, at the end of learning and post-learning (for example in the context of this paper writing), students gain new knowledge - or rather - produce new knowledge about open urban design. This production is indeed a reflective process that is not

"discovered instantaneously" when learning / studio finishes. This invention is a fairly long reflective process. In this context, the role of social media (e.g. groups involving students and lecturers post-learning) is still very effective. Therefore, letting it stay alive and interact will be a means of continuing integration between education and practice, studio and experience of finding problems in the community. Openness here is not only in the context of urban design but also in the learning process itself.

In terms of design thinking, studio that are stimulated by open building and open design trigger a abductive reasoning named by Cross (2011). According to Cross, abductive reasoning is the reasoning which is a backlash process between "what" which is a particular design object and "how" which is the working principle (e.g. urban design theory) to produce a certain value. This understanding is then stretched into abductive reasoning of type 1 and 2 by Dorst (2011). Dorst explains that type 1 is an abductive reasoning in which the component “what” becomes a question and “how” can clearly be elaborated to produce an aspirational value. This type is a common problem solving process. This type is a closed problem solving. Meanwhile, type 2 is abductive reasoning that contains unclear "what" and "how" components which make the equations among the three variables open. Dorst argues that this is normally for conceptual design (2011). Thus, open urban design also plays as stimulus for creativity and makes the studio in the level of abductive 2 that is more challenging for frame creation. Precisely in this frame creation is where the development narrative proposed by Sennett can be produced by the students.

Of course, the students’ proposals are still simple. However, quoting Pogenpohl (2015), it opens a dialog of design and learning that can be extended through “a community of practice” involving academicians and practitioners. Thus, practical design and learning in the studio should no longer be unfamiliar and closed (insular) with each other. Today's designers as well as students also need to play as a collaborator, synthesizer, prototyper, technological critic, visualizer, or researcher. As the community of practice, it is imperative that professionals needs also to make the tacit design knowledge more explicit so that students could collaborate better when they meet each other in studio either in-campus or off-campus. This openness may also need to be strengthened with the courage of students to create a primary generator while on early state of the design. Darke once pointed out that primary generator in a broader sense is an initial objective or small set of objectives that is self-imposed by the architect or the student himself based on a value judgment – shared with professionals – rather than merely the result of rationality (1978). For the author, the openness for constructing narrative and expliciting tacit processes has opened the beautiful dialogue between rationality and creativity rather than making a fettering opposition.

4. Conclusion

A learning experimentation in a design studio was conducted, involving fifteen students with one tutor. The experimentation shows that open urban design may be a new venue to open a broader understanding of urban design that is able to reach openness concepts, starting from the physical aspect (open building), the design process (open design), to democratic aspirations (open city). There are at least three genres in the open urban design namely: (1) Urban invitation that provides opportunities for the society to build narrative. (2) Urban frames that erases the barrier between architecture and infrastructure to evoke new variations of life-setting. (3) Urban parts as the process of forming codified urban elements that allow city citizens to plug in the city system. In the context of learning, it has been shown that open urban design is a concrete manifestation in the context of learning that implements abductive reasoning type 2. This type challenges students to actively build their own narratives that are expected to link education with the needs of society at a larger coverage.

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References

1) Architectural Education Commission the XXIIth UIA General Assembly (2012) "UIA and Architectural Education, Reflections and Recommedations", Berlin, July 2002.
2) http://www.architecture00.net/wikihouse/ [accessed 21 May 2017].
3) Van Abel, B., Klaassen, R., Evers, L., & Troxler, P. (2011). *Open Design Now: Why Design Cannot Remain Exclusive*. Amsterdam: BIS. Available at: http://opendesignnow.org [accessed 21 May 2017].
4) Bauwens, M. (n.d.). The Emergence of Open Design and Open Manufacturing. Available at: http://www.we-magazine.net/we-volume-02/the-emergence-of-open-design-and-open-manufacturing/#.Voqucos4Tao [accessed 21 May 2017].
5) Bashier, F. (2014) Reflections on architectural design education: The return of rationalism in the studio. *Frontiers of Architectural Research*, 3(4), pp.424–430 [https://doi.org/10.1016/j.foar.2014.08.004].
6) Batty, M. (2011) A Science of Cities. Available at: https://jmichaelbatty.wordpress.com/ [Accessed 30 Apr. 2017).
7) Batty, M., & K. Axhausen, et al. (2012). Smart Cities of the Future. *UCL Working Paper Series London,* The Bartlett Centre for Advanced Spatial Analysis. Paper 188 - Oct 12.
8) Conference Proceedings – The Future of Open Building Conference" http://www.openbuilding2015.arch.ethz.ch/conference-proceedings.html. [Accessed 30 Apr. 2017].
9) Cross, N. (2011) *Design Thinking, Understanding How Designers Think and Work*, Oxford, New York: Berg.
10) http://www.complexcity.info/ [Accessed 30 April 2017].
11) Darke, J. (1979) The primary generator and the design process. *Design Studies,* Volume 1, Issue 1, pp. 36-44, ISSN 0142-694X, http://dx.doi.org/10.1016/0142-694X(79)90027-9.
12) Deleuze, G. and F. Guattari, 1987. *A thousand plateaus: capitalism and schizophrenia*. Minneapolis: University of Minnesota Press.
13) https://www.dezeen.com/2013/05/21/3d-printing-architecture-print-shift/ [accessed 21 May 2017].
14) Dorst, K. (2011) The core of 'design thinking' and its application. *Design Studies* 32 [doi:10.1016/j.destud.2011.07.006].
15) http://www.dezwartehond.nl/expertise/open_stedenbouw&lang=en_US [Accessed 21 May 2017].
16) Habraken, J. (1972) *Supports: an Alternative to Mass Housing*, Urban International Press.
17) http://www.habraken.com/html/introduction.htm [Accessed 5 May 2017].
18) Ikatan Arsitek Indonesia, 13 Kompetensi IAI (13 Competences of Indonesian Institute of Architects Available at http://www.iai.or.id/sertifikasi/13kompetensi [Accessed 30 Apr. 2017].
19) Kendall, S. (2015) Reflections on the History and Future of the Open Building Network, 104, 1–7. Available at: http://Open-Building.Org/ [accessed 6 Jan. 2016].
20) Maharika, I., & Winisudaningtyas, G. (2012) The Pioneers: Mutation agent of the non-urban. *Monu*, 16, pp. 110-117.
21) McGinley, T. (2015) *An Architecture Framework for Open Building*. Available at: http://e-collection.library.ethz.ch/view/eth:48447 [Accessed May 4, 2017].
22) Phillips, J. (2006) Agencement/Assemblage. *Theory, Culture & Society.* 23 (2-3): 108–109. doi:10.1177/026327640602300219.
23) Poggenpohl, S. H. (2015) Communities of Practice in Design Research. *She Ji: The Journal of Design, Economics, and Innovation*, 1(1), 44–57. http://doi.org/10.1016/j.sheji.2015.07.002
24) Roy, A. (2005) *Urban Informality: Toward an Epistemology of Planning. Journal of the American Planning Association*, 71(2), pp.147–158. Available at: http://dx.doi.org/10.1080/01944360508976689).
25) Salama, A. M. (2008) "A Theory for Integrating Knowledge in Architectural Design Education" *Archnet-IJAR, International Journal of Architectural Research* - Volume 2 - Issue 1 – March.

26) Sennett, R., The Open City. Available at: http://www.richardsennett.com/site/SENN/UploadedResources/The Open City.pdf [Accessed May 5, 2017].
27) Sennett, R., The Cities Papers, Open and Closed Design. Available at: http://citiespapers.ssrc.org/open-and-closed-design/ [Accessed May 27, 2017].
28) Shulman, L. (2004) *The Wisdom of Practice, Essays on Teaching, Learning, and Learning to Teach* (San Francisco, CA: Jossey-Bass, 2004), 493–494.
29) Warwick Institute for the Science of Cities Available at: http://www.wisc.warwick.ac.uk/ [Accessed 30 Apr. 2017].
30) https://www.treehugger.com/sustainable-product-design/bridges-are-for-people-inhabiting-the-bay-bridge.html [Accessed 21 May 2017].