DOI: http://dx.doi.org/10.4995/LC2015.2015.891

Let's play with Le Corbusier

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Abstract: *The research focuses on the possibility of transferring theoretical ideas of Le Corbusier into educational programs of the very young children – between three and six. The worldwide development of civilization changed the natural environment of the human. For the average European citizen a city is more natural place for living than a forest. Simultaneously, in these days many inhabitants present an extremely conformist approach to life and to the surrounding space. The participation of members of the society in the shaping of public spaces is possible only through the involvement and practice, but the democratic responsibility does not appears out of nowhere. It must be fostered and nurtured as early as in childhood. According to developmental psychology, children in the age of 3-6 are very susceptible to the acquisition of new skills and learn it in an intuitive way. The proper education program using Le Corbusier's lectures and theory could help them to understand the space better. The seeming simplicity of above rules is an advantage in this case – thereby it can be explained to even such an audience as small children. On the other hand, some kind of abstract and hidden difficulty included in this theory becomes an opportunity to create a very absorbing and stimulating workshops that follow the needs of younger and older children. Le Corbusier's legacy includes not only physical issues and can be used in many different ways. As Pablo Picasso once stated: every child is an artist, the problem is staying an artist when you grow up. For those reasons, incorporating such an innovative strategy for kids' education reveals a great potential.*

Resumen: *Los estudios realizados enfocan en comprobar las posibilidades de usar las ideas teóricas de Le Corbusier en los programas educativos para niños de tres a seis años. El desarrollo de la civilización ha cambiado el entorno natural del ser humano - una ciudad para el ciudadano promedio de Europa es un lugar más natural para vivir que el bosque. Al mismo tiempo, hay que reconocer que muchas personas muestran el enfoque muy conformista a la vida, tanto al espacio circundante. Esta situación se podría mejorar mediante la participación consciente de los miembros de la sociedad en la creación del espacio público, su compromiso y la práctica. Pero la responsabilidad democrática no aparece sola, se debe estimularla y nutrir ya en la infancia. De acuerdo con la psicología del desarrollo, los niños de 3 a 6 años son muy susceptibles a la adquisición de nuevas habilidades y aprenden de una manera intuitiva. Programa educativo que utiliza los cursos y la teoría de Le Corbusier puede ayudarles a entender mejor el medio ambiente. La aparente sencillez de los principios proclamados por él en este caso es una ventaja. La abstracción y escondidas dificultades incluidas en ellos,nos permiten a crear actividades estimulantes que correspondan a las necesidades de los niños pequeños, tanto y mayores. Como afirmo Pablo Picasso: "Todo niño es un artista. El problema es cómo mantenerse siendo niño una vez que se ha crecido".*

Keywords: *Architectural education, children, Le Corbusier.*
Palabras clave: *Enseñanza de la arquitectura, los niños, Le Corbusier.*

"*The child is both a hope and a promise for mankind*"
Maria Montesorii

1. Introduction

Due to the worldwide development of civilization the natural environment more often is being replaced by the build-up areas. The architecture – buildings, streets and towns – becomes the background of contemporary human and affects every part of his live: reactions, emotions, relationships; the way of thinking and behaviour. Therefore, interest in issues related to space and architecture should be normal – in spite of that, most of the

people turn around from the problems of nearest surrounding. “Someone else should take care of this” – it is a common opinion on this subject. As a result cities are full of chaotic public spaces, ugly buildings and angry, dissatisfied people. Alain de Botton[1] wrote that good architecture can stimulate enthusiasm and teach people to look at things more consciously. But, as in the case of poetry or other arts, to begin to be fascinated by the architecture, it is necessary to understand its meaning for an individual user in a particular moment of his live. At the beginning it is unclear what to look for, what is important, what is worth an attention. Through a careful observation of space and time in architecture, it gradually becomes possible to enjoy a building or a public space with a growing understanding and fascination.

One of the big problems of modern polish architecture (and perhaps not only polish) is the lack of acceptance of the role and work of an architect. Gone are the days when, as in case of Le Corbusier, designer was a Demiurge shaping lives of ordinary people through the architecture and urban planning. Contemporary investor rarely has the appropriate education of architecture and art and often agrees with the arguments in the field of economics than aesthetics. Why is that? What can be done with it?

The participation of members of the society in the shaping of common spaces is possible only through the involvement and practice, but the democratic responsibility does not appear out of nowhere. It must be fostered and nurtured as early as in childhood – by spontaneous action and design[2]. The most important issues like terms of shaping the form of buildings, harmony and composition, selection of materials, colours and textures, respect for cultural heritage or environmental awareness can be inculcated in a simple way through fun and games. According to developmental psychology, the best time to learn spatial abilities for children is the period between 3-6 years. In this age children are susceptible to the acquisition of new skills and learn it in a very intuitive way.

Regrettably, educational programs in many countries (including Poland[3]) treated architectural teaching extremely superficially. Polish legislative acts, like *The Education Act (dated 7 September 1991)* and *Regulation of the Minister of Education (dated 27 August 2012) on the core curriculum of pre-school education and general education in particular types of schools* specify only general dispositions:

- to disseminate among children and adolescents knowledge of the principles of sustainable development and shaping the attitudes favouring its enforcement at the local, national and global communities (*The Education Act*);
- to build children's knowledge about the social, natural and technical world (*the core curriculum of pre-school education*);
- to stimulate interest in painting, sculpture and architecture, including green architecture and interior design (*the core curriculum of pre-school education*);
- to teach how to identify selected fields of art: architecture, painting, sculpture and graphics (*the core curriculum of primary school education*);
- to teach how to identify selected works representing various fields of art, including architecture (*the core curriculum of general school education*);
- to distinguish between styles and trends of architecture and art (*the core curriculum of general school education*);
- to participate in culture through contact with monuments (*the core curriculum of general school education*).

[1] [2], p. 19.
[2] [5].
[3] Except the Nordic countries.

As it is clear from the foregoing list the proposed by authorities actions concentrate on passive teaching methods: recognition, differentiation, description. Current experience and research on development and education of children prove that only practical actions can achieve intended purpose – to develop the children's sensitivity to spatial issues. It is very important especially for the youngest. One of the major problems associated with the transmission of knowledge of architecture and related issues is the lack of adequate trainings for teachers in kindergartens and primary schools. Admittedly some children attend extra classes developing theirs artistic and spatial skills – but these are often children of parents associated with arts or architecture. Most children gradually lose the natural interest in space, treating it as something obvious and devoid of significance.

Conducted research on *Architectural education of the youngest* focused on ability to translate the key issues of the theory of architecture into basic set of guidelines understandable to the layman. Properly constructed program of architectural activities mixed with theoretical problems clearly and simply explained can be a useful didactic aid for kindergarten's and primary school's teachers. A systematic but flexible methodology aimed to improve educational practices through three-stage activity: analysis/exploration, design/construction and evaluation/ implementation.

This paper is a presentation of parts of the research that verifies possibility of transferring theoretical ideas – in this case Le Corbusier's[4] – into educational programs of the very young children between three and six.

2. The synthesis of Le Corbusier's theory in a context of architectural education of the youngest

It goes without saying that Le Corbusier (Charles-Édouard Jeanneret) is still one of the most important and influential architectural personalities of the twentieth century. Although until his death in the Mediterranean Sea nearly fifty years have already passed, his works, books and individuality exert enormous influence on subsequent generations of architects. The name of Le Corbusier raises mixed emotions: from uncontrolled delight to crushing criticism, but all roads of modern architecture lead either to or from him. Admired or hated, Le Corbusier is unavoidable. His specific way of arguing, polemical tactics and drawings permanently entered into the language of architectural education. Le Corbusier's legacy includes not only physical issues. The influence he was able to exert was in part due to his lectures and publications. One of the best known (and, as Tim Benton[5] writes, the least understood book in twentieth century) was *Vers une architecture* (1923). Between 1924-1926 Le Corbusier published four following books containing his most important theoretical ideas – *Five Points of Architecture,* a *Modulor* concept, a purifying white, a sequential way of shaping space. The simple rules hard to use in practise but absolutely powerful.

The fundamental issue during implementation of research study was to isolate key principles and theories of Le Corbusier and to translate them into language understandable to very young children. Due to the large difference in the development of children in the studied period (3-6 years), in this case target age group was limited. Proposed educational program has been adapted to five-year-old children.

The previously mentioned three-stage activity corresponds to three conventional parts of workshops (classes prepared according to the so-called project method). Duration of each part has been adapted to the five-year's old pre-school children:

[4] The conducted research assumes analysis of the theory of architecture for possible use the achievements of other great architects-theorists, not only Le Corbusier's.
[5] [1].

- introduction (5-10 minutes);
- activity (20-30 minutes);
- conclusion (5-10 minutes).

2.1 The first phase: analysis/exploration

The content, structure, and instructional approaches was firstly identified through a literature review and the input of experts and practitioners. A preliminary literature review was conducted with the purpose of identifying the main objectives to be achieved and principles that have the potential to be useful for the work with children. The author analysed both the texts written by Le Corbusier as well as a series of analytical positions about his work. This study revealed a multiplicity of research being conducted constantly based on his works. The choice of the leading idea is always burdened with subjective preferences. Finally, it was decided to highlight the specific role of human in Le Corbusier's designs and theoretical considerations. A human being was for Le Corbusier the beginning and the end of the design. The architecture became a reflection of existence – both literally and metaphysically. Moreover, a reference point to every realization and theoretical project was a man – typical, but not without its own individuality.

According to Le Corbusier, a return to anthropomorphism, as the basis of design, should restore human scale in space, which idea was lost during the French Revolution. The metric system based on speculative method of measurement seems to be responsible for the dislocation and perversion in the architecture, and designers should turn away from him and return to the sources – the human body. In manifest published in 1949 called *The Modulor: A Harmonious Measure to the Human Scale* – Le Corbusier wrote that for a good composition it is only necessary to guarantee a few elements, but each of them should be *a personality of strong personality*[6]. All arithmetic is written using ten digits, all music is saved with six notes – everything is the result of conjugated agendas, both cosmic and human. It's like keyboard, on which a great number of different scales is possible to play, but each element engages with its neighbours in one unit [7]. Le Corbusier left the metric system and created his modular system of proportions. The starting point was the proportions of the male body as a basic canon. Le Corbusier superposed Vitruvian dimensions scheme with the golden section represented geometrically or with a use of an analytical formula.

The second concept – *The machine for living in* (*machine à habiter*) – raises the question of the means of relation between the user and the building – subordination and the supremacy. For Le Corbusier was clear that the aim of creation in architecture is "to accommodate a man". In spite of many critical comments and controversies which affect his legacy at the present time, this simple principle is still valid. Furthermore, Le Corbusier was extremely interesting as a human. A costume consisting of "*bow-tie, starched collar, and bowler hat; rhetorical style combining discipline, enthusiasm, ironic wit and moral outrage*"[8], made him perfectly standard for the times. Even his adopted name – Le Corbusier – sounded like an object-type. Simultaneously the way he spoke, the conviction of the rightness of his judgements, independence and individuality – all that made him almost a character from a fairy tale: black-and-white, pure and intransigent.

[6] [6].
[7] [7], p. 14.
[8] [4], p. 31.

The most known concept of Le Corbusier heritage, *Five Points of Modern Architecture*, in combination with previous ones may become a buckle unifying seemingly unrelated issues: a human and a machine, individuality and standardization.

The use of the form of *Modulor*, *The Machine for living in* and *Five Points of Modern Architecture*, as a leading themes during workshops with children have some evident advantages:

- firstly, it refers to the well-known concepts, which will be elaborated later on it this paper;
- secondly, it affects the imagination;
- thirdly, it stimulates desire for individual experience.

This part of theory had to be transformed into a manner understandable for children.

The target group forced a particular approach to explaining Le Corbusier's theory; a child of five is very physically fit and independent: can jump on one leg, is able to build a complex building with blocks, speaks correctly and fluently. It gladly imitate adults playing their roles. This is a good opportunity to dialogue with child and to focus its attention on the selected issues. It should be remembered that at the same time the energy level of the child at this age is high. Young children have relatively short attention spans, though, and generally behave best when alternating activities is adopted: those requiring sitting still and focusing with those that allow for physical movement. Interest and engagement in the lesson is the key way of holding their attention. Small groups of children may be able to play together for 15 minutes or up to a 1/2 hour if they are engaged in novel, interesting playful activities[9]. The introduction of new issues must be based on past experience – theory or history of architecture is a subject relatively rarely taken up in conversations with children. Therefore, some parts of **knowledge should be simplified, but not distorted.**

The analysis of the works of Le Corbusier with additional regards of developmental possibilities and limitations of five year olds and a preliminary interview in a selected group of children provided detailed feedback for an opening: a history of a man who wanted to find a recipe for a home.

Therefore, firstly, was made a reference to the well-known concepts: a home (a place to living in) and a recipe (selected group participated earlier in the program *Preschoolers are cooking*). Secondly, it affects the kids imagination: dressed in black man who stirred the pot with big spoon to do a "home soup". Thirdly, it stimulates desire for individual experience – everyone wants to participate in such a "cooking".

From a scientific point of view, the above story can convey the most important elements of the Le Corbusier's theory in a very simple way: a *Modulor* concept as a soup of ingredients, *Five Points of Modern Architecture* as a recipe. The human is both demiurge and component in a *Machine for living in.*

2.2 The second phase: design/construction

The theoretical analysis was essential for understanding the heart of the matter and for workshops preparation. The active phase had to meet several another requirements: the classes should be interesting, immersive, involving all, changing in time, tailored to the age of the children, and primarily – not boring.

[9] http://www.earlyinterventionsupport.com/qa-normal-attention-span/

- The first level of difficulty (a scale 1:1):

After short introduction children was exposed to the concept of *Modulor* by working with their own bodies. It was action on a scale of one to one – they learned about the theory through direct experience, feelings and emotions. The pupils compared the dimensions of their own body parts – with each other and in the context of the space around them. The physical activity gave them the opportunity to individual observations – they discovered for themselves the spatial relationships between objects, furniture, items of equipment (like windows, doors, basins, toilets, mirrors, etc).

1. *Who's chair is more comfortable?* Workshop in kindergarten, Poznan, May 2015.

Then for each child its own *Modulor* was made. On large pieces of brown paper personalized shapes appeared. This caused great joy to children and was the reason of many ridiculous comments. It was also a time for rest and relaxation.

2. *My own Modulor. Could I take him home?* Workshop in kindergarten, Poznan, May 2015.

- The second level of difficulty (a scale 1:22):

By comparing their own experiences and the possibility of moving the wooden puppet children familiarized themselves with the issues of scale. They explored its abilities, the range of motion and wondered what it would need for life.

Afterwards, the children were divided into four groups and they started "cooking". The main component was a matchbox as the primary equipment of each of the apartment. For the role of the boiling pot white, cardboard boxes with pre-cut holes were picked.

3. The "cooking" process. Workshop in kindergarten, Poznan, May 2015.

Each group presented the individual approach and their own interpretation of the module. The only role of the teacher was to draw children's attention to problems of dimensions of a human model – for example, that furniture should be appropriate to wooden puppet. Children ware allowed freedom and flexibility in completing the arrangement: they furnished and decorated their homes according to own aesthetic preferences – colorful scraps of materials, paper, sponges, or colored pencils filled the purist white boxes. This outcome allowed the extension of pre-planned objectives on an additional issue – Le Corbusier's reply upon learning that the housing project he had designed at Pessac had been altered by its inhabitants. In response to the changes he said: "*You know, it is life that is right and the architect who is wrong*"[10]

The summary of this phase was based on the presentation of apartments, during which both utilitarianism and repeatable solutions, and individualism was emphasized.

2.3 The third phase: evaluation/ implementation

The third phase was connected with another level of difficulty: an abstract approach. The "ready-machine" built in the previous step was transformed into a housing unit. It made possible to raise the global issues associated with the growing population of people in the world, lack of green spaces, and traffic problems. The children ware able to explore different settings of blocks – hints of the teacher led them to the solution close to Marseilles's unit. Finally, recalling *Five Points of Modern Architecture* as a recipe allowed for a discussion about children's own experience – the place they lived in.

[10] "*Vous savez, c'est la vie qui a raison, l'architecte qui a tort*", [3].

4. *Five Points of Modern Architecture* – how to make a home-soup. Workshop in kindergarten, Poznan, May 2015.

These activities show the abilities of using a simplified version of Le Corbusier's theory through the cooking analogy. It helped to create personalized spaces that with the use of repetition and module could become a major component of the "greater cuisine", namely housing unit.

As "a homework assignment" that would consolidate knowledge it is recommended to apply further observation of the surroundings or drawing from nature and from memory.

3. Conclusions

The *Architectural education of the youngest* project originated in the desire of an architect to tackle the growing problem of the decreasing quality of town space. It consists of various activities, both theoretical and practical. Roger A. Hart wrote: "*We must work with educational authorities to change their conception of schooling. Currently they fear too much the collapse of control which would result from practising democracy. While we work on this slow and difficult process, we must continue to work with non-governmental organizations which, throughout the world, have been providing most of the creative examples for effecting children's participation*"[11]. Architectural workshops engage children of all ages in the design process. They draw the attention of young audiance into the surrounding space and develop interest in the built and natural environment. Working with spatial models efficiently develops such skills as creativity and creative thinking. Participation in the design workshops sensitize children and young people to the use of the simplest materials and techniques for innovative, unconventional solutions. It allows to gain knowledge on architecture, ecology and sustainable development and introduces the concepts such as context, cultural heritage, dialogue with the environment.

The above workshop was held in May 2015, in one of the Poznan (Poland) kindergartens.

It was organized as a single meeting conducted by an architect. Large interest of children and teachers, theirs active participation, and the obtained results confirms the thesis, which is that the proper education program using Le Corbusier's lectures and theory could help children to understand the space better. The simplicity of the Le Corbusier's vision of modern architecture allows to use it not only in design and theoretical discussions, but in other areas too. The seeming accessibility of above rules is an advantage in this case – thereby it can be

[11] [5], p. 37.

explained to even such an audience as small children. On the other hand, some kind of abstract and hidden difficulty included in this theory becomes an opportunity to create a very absorbing and stimulating workshops that follow the needs of younger and older children. Ultimately, the proposed activities should be prepared in such a way that they can be carried out by the preschool staff and flexibly adapted to other teaching activities. Depending on the needs, the program of activities can be expanded and extended in time. Pre-schools teachers, who usually do not have adequate training in architecture, can develop skill and expand their knowledge together with children. Suggested activities can both complement daily educational activities and be a separate element that have a potential to impact the selection of other educational content.

The next step of conducted research is to prepare the course and source materials for kindergarten teachers (in collaboration with experts in the field of early childhood education and artistic education) which will allow them to personally lead classes related to architecture.

4. Acknowledgements

This paper is part of the research carried out at the Faculty of Architecture at Poznan University of Technology within the research project entitled *"Architectural education of the youngest – phase 2"* financed by the Polish Ministry of Science and Higher Education in Warsaw (2015).

5. Source of images

All images ware took during the workshops by Ms. Agnieszka Jaskuła, May 2015.

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