Children as conscious recipients of space. The role of architectural education in the process of teaching

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Abstract. Nowadays, when we are often witnessing to chaos, the lack of aesthetics and respect for historical buildings both in cities and rural settings, the social awareness of the space in which we live is extremely important for the preservation of its quality. The discussions in scientific circles from around the world: among architects, urban planners and cultural anthropologists, which have been going on for years, postulate that education from an early age is one of the most important ways of protecting the cultural landscape and maintaining sustainable development. This issue is very broad and includes various aspects, aesthetic, cultural, creative, but also civil – a shared responsibility and a critical attitude towards the environment. The aim of this article is to bring attention to the need for architectural education for children. Based on examples from different countries, where the topic of integrating architectural educational programs into the core curriculum from kindergarten to high school is very popular, the author highlights the situation in Poland, where in recent years, more is happening to raise architectural awareness among the youngest.

1. Introduction

Architecture, both in the material and spiritual dimensions, draws much from tradition, heritage and nature, becoming an undeniable component of everyday existence. It affects the feelings, senses and sensations of human beings, affecting both the physical (utilitarian) and psychic – an emotional response to a place. As Yi-Fu Tuan wrote, citing the words of Susanne Langer: “The architect creates a cultural image: a physically present human environment that expresses significant functional, rhythmic patterns constituting culture” [1, p.207 as cited in Langer, 1953]. Architectural space manifests itself in a multitude of connotations, expressing human moods, feelings and rhythms of functional life in a specific way [1]. Experiencing architectural space is one of the most important elements in the system of human value. The formation of emotional relations with a given space is quite a complex process, which includes concepts such as assimilation, valuation and assessment. Only when the meaning of those words is understood can man identify with his environment and become less indifferent to the processes and transformations taking place in it.

Nowadays, as we are witnessing much more chaos, lack of aesthetics, and lack of respect for historical buildings both in cities and in the countryside, social awareness regarding the space in which we live and taking responsibility for it are extremely important if we are to preserve its quality. For years, scientific discussions among architects, urban planners and cultural anthropologists from around the world have postulated that in order to protect the cultural landscape and promote sustainable development, we need to educate our children on the subject from an early age. The ability to make the right decisions regarding the built environment will depend on the knowledge acquired by future generations during their educational process [2]. This issue is very broad and contains various aspects, from aesthetic (sensitivity to the environment: beauty, ugliness), cultural (knowledge and respect for
architectural heritage), creative, and also civic – a shared responsibility and a critical attitude towards one’s surroundings.

2. Perception in a child’s world
From an early age, children are active participants of space and experience it as an area in which they reside. Movement, visual perception, touch, and even sound\(^1\) define individual objects in a child’s environment. Their understanding of the world is significantly different from the perception of an adult human who perceives space with all their senses, engaging the imagination and consciousness in the process. Small children, from the age of 6 to 8 months, begin to divide the environment into “their” and “foreign” space, and over time, the concept of “place becomes more specific and geographic” [1, p.45]. Their surroundings acquire special meaning where different content and values accumulate. As time goes by, children become explorers and researchers, and by learning about the world around them, they build a mental map of their impressions. The nearest neighbourhood, house, school, village / city begin to influence directly and indirectly how a child functions and perceives the world. This, in turn, leads to attachment and rooting with a place that has become close and understandable for them [3]. Awareness is therefore extremely important in the process of experiencing. It accentuates the difference between the “emotional temperature” [1, p.139] between what is inside and what is outside, and as a result strengthens social relations based on identity, cultural connotations and history. It is the role of adults: parents, teachers, educators, to foster sensitivity in the youngest among us to the laws governing the urbanized environment, the art of shared responsibility and collective decision making in order to respect and protect it, which is necessary for the harmonious functioning of the whole in the future.

3. Spatial education recorded in documents from around the world
The aims of cultural education mentioned above are included in the records of relevant global documents, such as the Convention on the Protection of World Cultural and Natural Heritage of 1972, in which Article 5 states: “to foster the establishment or development of national or regional centres for training in the protection, conservation and presentation of the cultural and natural heritage and to encourage scientific research in this field” [4], and in the UNESCO Convention on the Protection of Intangible Cultural Heritage of 2003 [5], on the need to launch programs aimed at educating, raising awareness and disseminating knowledge in this field, in particular among young people. The 1985 Convention on the Protection of the Architectural Heritage of Europe [6] recognizes architectural heritage as an indisputable and priceless testimony to our past, which is the common heritage of all Europeans. Therefore, starting from school aged children, one should strive to deepen public awareness of the importance of architectural heritage as both an element of cultural identity and a source of inspiration for present and future generations. It is also important to understand the connections between architecture, art and tradition on a national, regional or local scale. The 2005 Council of Europe Framework Convention on the Value of Cultural Heritage for Society points to the need to protect and promote cultural identification and a sense of shared responsibility for the place in which one lives. In particular, Article 13 of the Convention on “Cultural heritage and knowledge” addresses the need to improve access to information about heritage among children and young people. It also grants an important place for cultural education, not necessarily as an independent subject, but as a subject integrated with other subjects at all levels of education [7]. The European Parliament Resolution of 2009 on artistic studies in the European Union also notes that in recent years, economic reasons have led the Member States to reduce the amount of time devoted to broadly defined art (including architecture) in general education policy. Artistic education, according to the postulations

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\(^1\) Sound, according to Yi-Fu Tuan, can also create the impression of space. So-called “musical space”, arises as a result of spatial illusion, “irrespective of the phenomenon of sound intensity and the fact that the melody logically develops in space” [1, p. 27].
of the resolution, is a key pedagogical tool in the era of cultural transformation and change in the time of globalization. It affects the development of “free will, sensitivity and openness to others, shapes creativity as well as physical and intellectual development in this sphere, contributing to the creation of closer and more fruitful relationships between education, culture and art” it is also a carrier of civic education and protection of local values [8]. Schools should, therefore, be the main place for disseminating access to culture, and art education should be a compulsory element of educational programs at all levels. These words are also confirmed by the Resolution adopted by the General Assembly of the United Nations (UN) in 2015, which says that the role of the school is to provide high quality education at all levels of schooling, from pre-school education, primary and secondary education as well as technical and vocational education; educating in accordance with the idea of shared responsibility for the surrounding world, which is constantly changing. Education should, therefore, prepare and educate future citizens about the possibilities of participation in integrated planning and spatial development, by strengthening key skills in children, such as communication, cooperation, creativity, and problem solving [9].

In order to include this knowledge within the traditional teaching system, there must be a change in pedagogical reality, which is certainly a long-term process [10]. This is something that needs to be addressed by authorities, educational and cultural institutions, architects, the academic world and non-governmental organizations.

4. Architectural education around the world

Around the world, the topic of integrating culture and architecture into the class curricula from kindergarten to high school has become very popular in recent years. The so-called Building Education (BEE), or architectural education, covers a wide range of activities, such as “environmental, architectural, design and (visual) education” [11]. On the one hand, its target is to help children enjoy the exploration of urban and natural landscapes, understand them and identify with them; and on the other – taking a multi-faceted approach to the learning process, encouraging critical thinking, and developing artistic potential in understanding environmental and spatial aspects. A very important role in the issue of spatial education is played by the International Union of Architects (UIA) – a non-governmental organization created by the Architecture & Children Work Program in order to educate children about architecture and spatial processes. It connects architects from 124 countries around the globe and provides a platform to share ideas and experiences. The goal of the UIA is to take part in initiatives and activities regarding environmental education, bringing together schools and groups of architects. For this purpose, a project called “Architects in schools” was launched, in which active designers, artists and other specialists (town planners, engineers) cooperate with teachers and parents in teaching children. This is done on the basis of training and development of teaching materials that allow architecture to be included in school curricula. Interdisciplinary cooperation is implemented on specially planned architectural lessons or included in other teaching subjects (e.g. mathematics, geography or natural sciences). Bearing in mind the varying needs of regional education, guidelines and curricula present a general character and are adapted to different countries and cultures. According to UIA regulations, the most important goals are: to familiarize children with the basic concepts related to architecture (scale, proportion) and dependencies (public / private spaces, their / foreign space), showing the relationship between the built environment and the nature, increasing awareness of the role and the importance of architectural heritage in shaping local identity, as well as developing young people's imagination and creative thinking in the design process [12]. Classes with children focus on solving problems related to space in a creative way, and include various thematic blocks and scales: from the scale of the space of a house to the space of the school, the neighbourhood, the city. During the lesson, through observation and discussion, students are tasked with solving a problem and presenting their solution in graphical form, followed by verbal discussion. The subject matter, through the atmosphere of play, is to help them understand the surrounding space and its function, with
creative activities that stimulate the mind, imagination and manual skills of children, including their sense of aesthetics.

Activities conducted by UIA are consistent with the educational concept of STEAM (Science, Technology, Engineering, Art, Mathematics), which emphasizes the important role of art and all other creative activities as an equivalent factor in the process of scientific experience. The leaders in this topic are the United States, where education is treated as “a complex undertaking in which various fields complement each other and do not exclude one another”². Therefore, the programs of individual subjects are built on the principle of integration of many fields of science, including artistic classes. Until recently, art was pushed to the rank of less important subjects. However, it was proved that the combination of science subjects, such as mathematics or physics, with artistic ones, positively influence the holistic development of a child, including their interest in science. It affects their multisensory skills, creative thinking, spatial imagination, and their level of observation and openness to new experiences. Both passive (observation) and active (creative work) contact with art play a powerful role in the course of the psychological process in the context of both direct – stimulating the brain cells, and indirect – contributing to the development of insightfulness, perception and civic qualities [13, referring to the words of Mirski, Jagiellonian University in Krakow]. The aim of Artistic education (ART) is therefore not only to sensitize the child to problems concerning the aesthetic, but also to help the child develop in all other areas of life. It has been proven that people educated in these skills process visual information faster and are able to see more ways of solving problems, which can contribute to the upbringing of people who are better able to cope in the modern world. Such an interdisciplinary approach to education is undoubtedly a very important factor in raising a young person. Taking into account the pace of today’s life, which requires more and more adaptive skills in the professional field, including flexibility, creativity, innovation and communication, artistic education is extremely important from the socio-economic perspective [14]. Therefore, the STEAM concept gives great opportunities to broaden horizons, which in the future may contribute to the interdisciplinary cooperation of artists, designers, graphic designers, architects or constructors on the basis of cooperation between different environments.

Similar models of upbringing in culture and the idea of a multi-faceted approach to education, with special emphasis on artistic and spatial education, are implemented in many countries around the world, such as Spain, Great Britain, Japan, Russia, Italy, Finland, Sweden, Norway, Portugal and Slovenia. Schools implement educational programs on the basis of partnership with cooperating organizations or architects. The main assumption of the course is to prepare children for active and conscious participation in activities concerning the space and the environment in which they live. In Portugal, for example, the association of architects OASRS (Order of Architects of the South Regional Section) has started conducting a pedagogical project called PuEmA, based on creative workshops for children. It is a response to the deficit in teaching about space in traditional educational programs [15]. Children, as active participants of urban space, have a lot to say about it, and through play, the creators-designers learn to think, solve problems and express their views. They are thus brought closer to architecture, to basic concepts defining space and to a participatory approach to design. In Australia, the idea behind its Archikidz program is: “Better cities thanks to strengthening the role of their future creators” [16]. It emphasizes the role of children as citizens of the city, helping them discover it, get to know it and experience it with all their senses, and through involvement in various urban activities, focuses on the needs of future generations. Archikidz also functions in other countries, i.a.: the Netherlands, Norway, Spain, Argentina, Portugal and Chile. Another example of the spread of architectural education is the Arkitente platform – a municipal pedagogical network introducing architecture to its youngest members. Schools and organizations can share their experiences and

² The words of the American secretary of education J. B. King [12].
Reflections on teaching children architecture from the age of 8 to secondary school [17]. It is a flexible tool that provides schools with teaching material about space for various subjects: environmental education, art education, social sciences, mathematics or history. Such an interdisciplinary approach to the subject of space becomes the basis for the joint acquisition of knowledge about one’s environment. According to the authors of the project, Maria Arana and Gorka Rodriguez, the ideal way to interest the youngest students in architecture is primarily through a conversation about their immediate reality – what they see and what they experience directly on a daily basis. Once the curiosity about these places is aroused in students, they are encouraged to respect, protect or change these places [10]. In Spanish Catalonia, the El Globus Vermell organization is implementing the Arqui-Escola education program, which is to introduce children to the world of architecture in elementary school. It is divided into three thematic parts, each of which refers to different spatial scales and three phases of work: “observe, think and do”. In creative classes, children learn about physical space, and also experience the more intangible concepts of social and cultural space. Thus, they are sensitized to the identity of the place, social ties, cultural diversity and sustainable development, all for the future, in a mature and constructive way, and are encouraged to participate in the common design of the environment [18].

Urban Kids Lab – this is, in turn, a city research laboratory, created by Chiquitectos and Social Commitment from the Castellana Norte District (DCN) in Madrid, also involves children in the urban design process. Activities focus on the following phases: feeling, imagining, acting and sharing ideas in public [19]. This approach goes far beyond school curricula and is an alternative to some of the school lessons.

It is the Finns, however, that lead in the spatial education of children. It is in this country that particular emphasis is placed on the coexistence of artistic activities and cultural education with other subjects. Such classes have been implemented here since kindergarten, and then – as a compulsory (since 2006) subject in elementary education as part of the national curriculum, which is carried out as part of the course "visual arts", mathematics, history and cultural knowledge [20]. According to global rankings, Finland has one of the best education systems, which translates, among others, to be able to find a job after finishing school. Teachers support the idea of “learning by doing” and “with simple, small steps promote the joy of teaching and the joy of learning” [21, p.152, 13]. They believe that every citizen should have a basic and at least a minimal knowledge of the environment in which he or she resides. The purpose of such classes is to understand the relationship between society and the natural and built environment. That is why great emphasis is put on getting to know one’s cultural heritage, and thus making children aware of the need to protect it. The child understands the values and characteristics of the place he comes from, begins to identify with it and develops a sense of responsibility for it. “Students participate in interdisciplinary activities, local field work and meetings with experts to achieve a higher goal” [21, p.135]. In Finland, there are also many private schools of architecture aimed directly at young people and children, such as Arkki – School of Architecture and Lastu, which act as alternative methods in out-of-school education.

5. Architectural education in Poland

Patterns seen around the world are also visible in Poland as well. In order for future generations to live in high quality spaces, they should definitely be taught about them. Until recently, artistic activities in the core curriculum of Polish schools have been pushed to the margins, and reports from the curriculum research commissions indicate that teachers conducting such classes were not prepared to perform such a function. The current core curriculum recommends the implementation of artistic and cultural education at all stages of education. Both the core curriculum of general education for primary school [22] and the new core curriculum of general education for secondary school [23] talk about the essence of artistic and spatial awareness in the teaching process. Pursuant to the Regulation of the Minister of National Education of July 26, 2018 [24], it is necessary to create conditions enabling children to develop their identity, and allow them to communicate creative expression in a structural way and in play, which is intended to support holistic development. In post-primary education,
aesthetic sensitivity and the teaching of respect for national cultural heritage should be developed; students should learn about local architecture and art, and the content of such education should be integrated with subjects such as history, Polish language or IT. The most important skills acquired by the student at this stage of education, according to the document – Regulation of the Minister of National Education in the core curriculum of general education for high school, technical school and industry secondary grade school – include: “reasoning, abstracting, interpreting, imagining, judging, solving problems, and creativity” [25].

Despite the fact that the Ministry of Education emphasizes that creative activities affect the development of intellect and imagination, and that it should be developed from an early age, the reality of the situation looks different. In the core curriculum of kindergartens, primary schools or high schools, a subject such as architectural education does not exist. In the primary school system, it is carried out as a subject of art, and the core curriculum of general education for a general high school proposes a group of three subjects: visual arts, philosophy and music, which are taught in class one hour a week. This is a relatively small amount of time dedicated for educational purposes as postulated by the regulation. It is not uncommon that subjects are taught by people without the required competencies, and is treated by pupils as less important. There are no educational projects as mentioned in the regulation, no trips to explore the local area, and no getting to know the region or meetings with artists or architects. Most work is devoted to individual and not collective action. There is also no time for creativity, creative thinking or decision making. It also turns out that despite the declared integration of teaching content with other subjects carried out at school, creative activities carried out in various fields can rarely be observed. As rightly noted by Marzena Żylińska – a methodologist and neurodidactic, “Our current system of education systemically extinguishes the motivation with which children come to school, [a] Where there is no room for curiosity, motivation is lost” [26].

The deficit of artistic activities, including architectural education, has become a pretext for undertaking joint activities by the architectural environment addressed to children. The first project integrated with the Ministry of Education was the 2005 program “Dialogue with our surroundings – architectural education” by architect Dariusz Śmiechowski, art historian Zofia Bisiak and landscape architect Anna Wróbel. It was implemented until 2009 for junior high school classes, and also experimentally for the elementary level of teaching. Another practical application of architectural education in schools was the program of the Chamber of Polish Architects “Shaping space”, implemented since 2013 in secondary schools. It is a program taken from the Irish RIAI model (The Royal Institute of the Architects of Ireland) and adapted to Polish circumstances. In the first edition of the program of classes on architecture and urban planning, 65 secondary schools from all over Poland took part. On the basis of scenarios prepared by the Chamber of Architects, teachers of various specialities carry out the lesson plans in the classroom on issues related to architecture and urban planning. It covers three aspects (spatial scales) – house, district /village / metropolis and architectural history, and each module is scheduled for 10 hours. Teachers, through collaboration with architects and artists, conduct classes in the form of multidisciplinary workshops, combining architecture with other sciences (maths, history, geography). The last step is students developing a project for a competition related to the theme of space, the final of which takes place at a gala, with the best teams receiving an award for their work. Preparations are currently underway to launch the next edition of the project for the coming years.

Unfortunately, Poland still lacks an offering combined with common school curricula, although in recent years the situation of awareness among young people about spatial problems has started to change. This is mainly because of alternative methods of upbringing in culture. Institutions, associations, organizations, as well as individuals, conduct numerous workshops and classes in which, through the atmosphere of play, they bring children into the world of their landscape. A number of
different organizations should be mentioned here, among others, The Archery Academy Association, which since 2000 has been implementing a cultural education program; the Malopolska Institute of Culture, which publishes a magazine on space called Autoprtret, which also organizes workshops on space; the Warsaw Archidzieciaki group, the LafargeHolcim Foundation, the Institute of Architecture Foundation, the Design Institute in Kielce and the Museum Architecture in Wroclaw. We should also mention the project of the National Centre for Culture, which has been developing for several years – "Archiprzygody", intended for pre-school and early-school children. Similarly to “Shaping space”, it is based on ready-made scenarios of activities carried out jointly by a teacher and architect, aimed at developing aesthetic sensitivity in children, or awakening cognitive curiosity in them [27].

Such activities are also carried out at universities: Poznan University of Technology (the program “Shaping space” co-created with the association Wędrowni Architekci and Fundacja Twórców Architektury), Gdańsk University of Technology and the Białystok University of Technology. At the Faculty of Architecture in Białystok, a group of students created a “Little Architects” scientific organization, which runs workshops for children in early school age, from 6 to 12 years of age. As part of the classes, meetings are held devoted to selected aspects of design (Figure 1). The main thematic blocks cover various areas, including artistic, technical, spatial, social, and symbolic themes, and concern: architecture, interior design, urban planning, landscape architecture, history and cultural heritage of Białystok and the region, and the drawing or modelling of the surrounding world. The content introduced during classes is aimed at “awakening creativity, creative thinking, spatial imagination and the sense of observation in children. The subject matter, through the atmosphere of play, is to help them understand the surrounding space and its function, shape their social awareness of space, develop aesthetic sensitivity” [28], and promote regional education for youth. During the workshops, young architects learn about the difference between architecture and urban planning, about the difference between the projection and elevation of the building, about the basic elements of a house, its surroundings and interior. They can talk about the space in which they live, about the elements that comprise a city, what determines the quality of their space and what impact residents have on the appearance and function of their surroundings. Children also look at their home town, discuss its character and needs, important buildings, as well as the cultural heritage of the region. Together, they wonder about the significance of the material and spiritual traces of the past in building our identity. Each class begins with a mini lecture, after which the children start manual work.
Figure 1. Workshops for children organized by “Little Architects” – a student scientific organization at the Faculty of Architecture, Bialystok University of Technology.

All these examples of educational activities are consistent with the assumptions of the Polish Architectural Policy. It emphasizes the participation of each age group, including the youngest, in the system of planning and social participation. “Promotional and educational activities should be an inseparable component of the construction of an identity protection system, of cultural heritage. They are also necessary in order to recognize, understand, appreciate and protect the values of the surrounding space. Such an approach should be developed at every level of education, as well as building local ties based on passion for the history and traditions of the region, as well as creating the skills for aesthetic evaluation of works of artists of past eras and modern times” [29, p.8]. Point 8 of the project of the resolution also notes the need for interdisciplinary activities that combine architecture with other fields: art, science or the media, putting spatial education on an equal footing with other subjects in the school curriculum, which should be run by adequately prepared people.

6. Conclusions
As mentioned in the text above, the implementation of an architectural education program should be one of the most important issues in the social policy of each country. Nowadays, there is a need for a conscious society that participates in their cultural and natural environment. Developing cognitive skills from an early age, arousing children's curiosity, instilling methods of solving problems, all play a big role in shaping and developing aware recipients who will pay attention to the aesthetics of their environment and be able to take a position on the subject of the surrounding space. The educational value of such activities increases if they additionally take place through a play and with the support of competent people – a solid pedagogical base, including architects. Architecture and urban planning are very inspiring platforms for joint creative activities concerning the cultural, social or economic environment which affects our lives. It is, therefore, necessary to build a bridge of cooperation between architects, teachers and authorities. Only in this way is it possible to really experience the
subject of architecture and understand the design process. It is necessary to change the way of thinking and focus on the wider aspect of the space in which we live. Only through such activities can children be aided to understand their surroundings and its function, to stimulate creativity, spatial imagination, observation, as well as to participate in regional education and build on the sense of local identity. Undoubtedly, spatial education from an early age is an investment that will pay off in the future.

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References
[1] Y-F Tuan, „Przestrzeń i miejsce”, State Publishing Institute, Warsaw, 1987, (In Polish).
[2] The UIA Built Environment network. (n.d.). [Online] 2016 [Accessed 05 February 2019] Available at: https://www.architectureandchildren-uia.com/mission.
[3] U. A. Dworska-Kaczmarczyk, „Wiedza dzieci w wieku przedszkolnym z zakresu dziedzictwa kulturowego regionu”, Gardens of Sciences and Arts [Online] 2017 [Accessed 05 February 2019] Available at: https://jecs.pl/index.php/onis/article/view/10.15503.onis2017.195.201 (In Polish).
[4] The Convention on the Protection of World Cultural and Natural Heritage. [Online] 1972 [Accessed 05 April 2019] Available at: http://www.unesco.pl/fileadmin/user_upload/pdf/Konwencja_o_ochronie_swiatowego_dziedzictwa.pdf.
[5] The UNESCO Convention on the Protection of Intangible Cultural Heritage [Online] 2003 [Accessed 05 December 2018] Available at: http://www.unesco.pl/fileadmin/user_upload/pdf/Konwencja_o_ochronie_dz_niemater_2003.pdf.
[6] The Convention on the Protection of Architectural Heritage of Europe. [Online] 1985 [Accessed 10 April 2019] Available at: https://www.nid.pl/upload/iblock/621/6219bf31b7025833330c1e4182ced215.pdf.
[7] Council of Europe Framework Convention on the Value of Cultural Heritage for Society, Faro [Online] 2005 [Accessed 05 March 2019] Available at: https://www.nid.pl/upload/iblock/844/8445ee1eed20fe93856a52736d4eaa.pdf.
[8] The European Parliament Resolution of 2009 on artistic studies in the European Union (2008/2226 (INI). [Online] 2009 [Accessed 14 March 2019] Available at: http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2009-0153+0+DOC+XML+V0//PL.
[9] The General Assembly of the United Nations (UN). [Online] 2015 [Accessed 05 March 2019] Available at: http://www.unic.un.org.pl/files/164/Agenda%202030_pl_2016_ostateczna.pdf.
[10] A.A. Oro, „Arkitente. Programa de pedagogia urbana para niños”, [Online] 2014 [Accessed 05 March 2019] Available at: https://veredes.es/blog/arkitente-programa-de-pedagogia-urbana-para-ninos-zaramari/.
[11] A. Million, R. Parnel and T. Coelen, “Proceedings of the Institution of Civil Engineers – Urban Design and Planning”, [Online] 2018 [Accessed 05 May 2019] Available at: https://www.icevirtuallibrary.com/doi/10.1680/jurdp.2018.171.1.1.
[12] Jak sztuka pomaga modernizować. Perspektywy. [Online] 2016 [Accessed 05 March 2019] Available at: http://www.perspektywy.pl/portal/index.php?option=com_content&view=article&id=2996:jak-sztuka-pomaga-modernizowac&catid=208&Itemid=397, (In Polish).
[13] L. Wiosna, „Wyzwalanie ekspresji dziecka poprzez kontakt ze sztuką”. (n.d.). [Online] [Accessed 27 January 2019] Available at: https://docplayer.pl/312141-Wyzwalanie-ekspresji-dziecka-poprzez-kontakt-ze-sztuka.html, (In Polish).
[14] The European Parliament Resolution of 2009 on artistic studies in the European Union (2008/2226 (INI)). [Online] 2009 [Accessed 14 March 2019] Available at: http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2009-0153+0+DOC+XML+V0//PL.

[15] C. Celestino, “Crianças e arquitetura: assim se fazem novas e melhores cidades”, [Online] 2019 [Accessed 14 July 2019] Available at: https://www.idealista.pt/news/imobiliario/construcao/2019/02/15/38788-crianca-e-arquitetura-como-fazer-crescer-novas-e-melhores-cidades/?fbclid=IwAR0L9AKZug7qca4oNfOGPvMFTjoBLfwyJhnGZ0KKeRSBdC3BCGU1eB6wVc, (In Portuguese).

[16] Archikidz! [Online] 2015 [Accessed 05 March 2019] Available at: http://www.archikidz.com.au/.

[17] Arkintente. [Online] 2020 [Accessed 19 March 2019] Available at: http://www.arkintente.org/es/que-es.

[18] La educación en arquitectura promueve la formación de una ciudadanía más crítica, [Online] 2018 [Accessed 14 March 2019] Available at: https://www.isopan.es/magazine/la-educacion-en-arquitectura-promueve-la-formacion-de-una-ciudadanía-mas-critica/?fbclid=IwAR37yYSx-r4V07vk6K8mvrcXqsqj9onfLIK1nY27SwYpSLKvVU1mFWY-0a0, (In Spanish).

[19] L@s niñ@s del norte de Madrid hacen ciudad junto a DCN y Chiquitectos, [Online] 2019 [Accessed 05 July 2019] Available at: https://distritocastellananorte.com/l-s-nins-del-norte-de-madrid-hacen-ciudad-junto-a-dcn-y-chiquitectos/?fbclid=IwAR2AW7vYhvFjqrvtVF_lucR3YGAcpeCEk00i1iQajbQKykJIktf7_iyN840, (In Spanish).

[20] D.Wantuch-Malta, „Powszechna edukacja architektoniczna”. Architektura & Biznes, 2019, p.116-125, (In Polish).

[21] T.D. Walker, „Fińskie dzieci uczą się najlepiej”, Literary Publishing House, Kraków, 2017 (in Polish).

[22] The core curriculum of general education for primary school. Art., [Online] 2017 [Accessed 02 June 2019] Available at: https://www.ore.edu.pl/wp-content/uploads/2017/05/plastyka.-pp-z-komentarzem.-szkola-podstawowa.pdf, (In Polish).

[23] The core curriculum of general education for a general high school, [Online] 2018 [Accessed 05 June 2019] Available at: http://www.macmillan.pl/files/Nowa_Podstawa_Programowa_MEN.pdf.

[24] The Regulation of the Minister of National Education in the core curriculum of pre-school education and the core curriculum of general education for primary school. Dziennik Ustaw Rzeczypospolitej Polskiej, [Online] 2018 [Accessed 05 June 2019] Available at: http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20180001679/O/D20181679.pdf, (In Polish).

[25] The Regulation of the Minister of National Education in the core curriculum of general education for high school, technical school and industry secondary grade school. Dziennik Ustaw Rzeczypospolitej Polskiej, [Online] 2018 [Accessed 03 June 2019]Available at: https://www.ore.edu.pl/wp-content/uploads/2017/04/d2018000046701.pdf.

[26] Powinniśmy odejść od kultury nauczania i wprowadzić kulturę uczenia się. Interview with dr Marzena Żylińska, part I. Children are important. [Online] 2017 [Accessed 07 April 2019] Available at: https://dziejcsiwazne.pl/marzena-zylinska-1/?fbclid=IwAR2uzAS5GDwVI37Z2Lm6C7Un9dbMGV1q3oMDxdbhFw57grKCala4D10JYPeU, (In Polish).

[27] Archiprzygody, [Online] 2020 [Accessed 05 March 2019] Available at: https://www.nck.pl/projekty-kulturalne/projekty/archi-przygody/o-projekcie, (In Polish).
[28] Christmas architectural workshops, [Online] 2018 [Accessed 30 December 2018] Available at: https://pb.edu.pl/2018/12/13/swiateczne-warsztaty-architektoniczne/, (In Polish).

[29] Polish Architectural Policy. Landscape quality policy, public space, architecture, [Online] 2008 [Accessed 23 April 2019] Available at: http://www.sarp.org.pl/pliki/ppa_proekt.pdf.