If we consider the role of education and its implications in the formation of a critical and conscious user of architecture, it is obvious that the development of educational strategies related to the sustainable development of our common space and environment becomes fundamental. Among the objectives of art education, we should consider our commitment with authentic and actual problems in our societies. One of them is the awareness of the characteristics of the built environment. Our cities are, in fact, the results of time-space plasters that function as units of spatial experiences in everyday life. The oldest buildings are iconic points of reference, and their simple presence produces a collection of unique meanings to the collective memory of a culture. Their demolition would in many cases injure the cities’ images and memory. The main question is how to develop programs at all educational levels to promote critical and responsible attitudes towards the common environment covering all the aspects that shape the concepts of sustainable spatial development. However, it is not possible to create strategies without proper information about the views of the students. The collection and analysis of this views is the main theme of the paper. It is supported by an empirical research on the image of architecture and the environment, held among secondary school students. The research is based on the idea that one of the most efficient critical attitudes towards the world would be to develop an unconditional connection of art work with »everyday life conditions« to promote the education of critical and responsible »perceivers« of the environment.

**Keywords:** Architecture, Spatial perception, Sustainable development, The role of art education, Educational strategies

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Likovna vzgoja: med prostorskim trajnostnim razvojem in podobo arhitekture

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Ključne besede: arhitektura, zaznavanje okolja, trajnostni razvoj, vloga likovne vzgoje, vzgojno-izobraževalne strategije
Introduction

Equilibrium understood as a balanced state of »being« is a fundamental conceptual support when dialectical pairs such as »global/local«, »own/foreign« or »tradition/innovation« are involved in the discourse and practice of architecture. It is intriguing that these processes do not affect other fields of art, at least not in the same way they do in the case of architecture, demonstrating the potentialities and the power architecture has in the ideological, financial, social, cultural, historical, etc. aspects of life. The mechanisms of constructing such dialectical pairs of concepts follow different paths: they reflect a background of historical processes, cultural links and concrete practice, and evaluation of architecture.

If we consider the role of education and its implications in the formation of a critical and conscious user of architecture, it is obvious that the development of educational strategies related to our common space and environment become fundamental. On one side, we need to know how students perceive space, how they make conscious the values of space; on the other, the comprehension of the concept of sustainable development is essential. Sustainable development in this case should be understood as a pattern of resource use that aims to meet human needs while preserving the built and natural environment in a state of equilibrium so that these needs can be met not only in the present, but also by future generations. Therefore, it is worth asking a question: how were the problems of harmony and spatial order, which have a fundamental meaning for description of many phenomena and processes of spatial character, understood in the past and how they are perceived today, in the light of current documents, projects and realisations? Furthermore, how can proper programs at all educational levels promote critical and responsible attitudes towards the common environment, covering all the aspects that should shape the concepts of sustainable spatial and environmental development, enhancing at the same time great freedom regarding the formal aspects of architecture be developed?

However, it is also necessary to consider the consequences of the phenomenon of universalisation and the effects of an »en masse basic consumer culture«, as Ricoeur (1961) calls it, with its disturbing effects spreading a similar »fast architecture« throughout different countries in the world. From the point of view of identity, this could be nevertheless in some cases understood as a sign of the insertion in the »developed world« of consumption of architecture with a new definition of the roles of the architect and the client or user.

To be able to elaborate significant pedagogic strategies that would promote awareness about the spatial environment, it is necessary to gather
meaningful information regarding the fundamental questions of how students elaborate their representations of space values, and what influences their perceptions and interests and desires.

Trying to obtain this kind of information, we carried out empirical research on the image of architecture and its links to the identification with the environment, held among secondary school students. These opinions are of immense value at the moment of generating educational strategies within sustainable development. The research based on the idea that one of the most efficient critical attitudes towards the world would be to develop an unconditional connection of the art (architectural) work with »everyday life conditions«, arguing that the possibility to undertake the risk of an eventual incompatibility of beliefs regarding our common living space would be grounded on the education of critical »perceivers« of the environment as a whole, i.e. »perceivers« that could deal with eventual dissonances in a constructive and responsible way.

To obtain a general idea of the field we are interested in, we will present a brief view of the context of the discussion: starting with architecture, perception and environmental information, followed by some considerations on sustainable development and architecture; ending with sustainable development and art education.

The context of the discussion: architecture, perception and environmental information

The definition of architectural space has been throughout history, from the Renaissance onwards, increasingly linked to the product of subjective projection and introjections and hence opposing the idea of space as a constant »container« for things and bodies.

Today, the world of architecture offers a wide range of new experiences: deep shades, due to different occupations of space, the loss of the idea of the classical facade and the clarity and »readability« of the principles on which the building was designed replaced by reflecting materials, i.e. »mirror materials« that transform the conditions of interior and exterior architectural space with reference to the human body. Space without barriers and almost no »foreseeability« is slowly replacing the traditional architectural space, centred on the human body.

From a semiotic point of view, we should unfold the narrative program of a specific place as well as the phenomenological elements in order to elucidate how content and form would combine in the creation of a precise spatial experience.
»Urban space analysis« is consistent with what Gibson (1986) called »scanning«, or the broad »collection of ambient information« (the picking up of ambient information). Individuals explore the sequence changes in the organisation of space to obtain knowledge of the »map« of their environment. Interesting parts of the structure of the environment attract individuals' view, particularly the movements and displacements, differences, and certain details containing more information and attracting our first sight, according to Gibson.

Places and objects define space and give space »personality«. Space becomes a place when it has a precise definition and meaning (Tuan, 2003; Hiss, 1991). Things especially become essential according to the dictates of culture. Verbal language may also differ in the ability to articulate the levels of experience; therefore, according to Tuan (2003), art and rituals take on the task that verbal language cannot. Art works show material images that resulted from emotional images, making contemplation and thinking available. There is an intriguing paradox: mind creates distance and simultaneously destroys the immediacy of experience. Reflection on our past returns selected particles, thereby gaining permanence.

Puig claimed that the psychological aspects of space perception are related to sociological aspects, because we always depart from the perception of the cultural characteristics of the environment; therefore, the forms that we perceive are the unique ones that a particular social context allows. Even the most basic postulates of Gestalt psychology are largely the result of »cultural situations«, not only the consequences of our perception capacity (1979). People construct a kind of dialectic between successive perceptions. Based on current perceptions and previous ones, Puig established the new dimensions of perception and attention. This process is influenced by an ideological basis, the social context, conscious and unconscious interests, space, time, and by numerous foreseeable and unforeseeable factors.

The architect creates the image of culture: the natural and human environment is present, which reflects the characteristics of functional rhythmic patterns, which define and constitute a culture. These patterns are a complex of personal and social life. Architects intuitively detect cultural rhythm and seek to find a symbolic form, creating a world that is »naturally« complementary of an individual: at a personal level, this their homes; at the social level, this is expressed by representative buildings and their surroundings, according to Tuan (2003).

Holl says that to »open« architecture to perception means to leave aside rational understanding being open to intuition, which leads us to the nature of space. Dynamic perspective series generate fluid space from the viewpoint
of the body moving and constantly changing its axis. The axial view is not included in a two-dimensional surface, but in three dimensions and is also manifested in the force of gravity, electromagnetic fields, time, etc. The phenomenon of »current perspective« is the basis of spatial experience (2006). Light, colour and materials open processes, which continually raise new relationships.

The work of the architect is therefore also in the formulation, »invention« of new relationships. Architecture can no longer be bound to composition or function, but to a long and broad list of variables that allow countless combinations (Tschumi, 2001).

In such a broad context, we can see the spirit of this study: major changes in attitudes, perception and evaluation of events in the world of architecture, which occur in parallel with substantial shifts in the school environment and the appearance of a new »viewer-user-generator« student; rapid functional changes in his or her life and our responsibility as managers of the reproductive system of the ideological apparatus that school remain a necessary part of our social order.

**Sustainable development and architecture**

From a hermeneutical point of view, we need to reflect on the issue of sustainable development in order to understand how to approach spatial design in general, and how to create a connection between an incomprehensible tradition and a culture that insists on the conservation of certain elements: in this case, the conservation of specific places or architectural objects worth proper qualification in specific cases (Tomšíč Čerkez, 2012).

Preservation, restoration, and rehabilitation in architecture cause much less destruction to our natural resources than new construction. To appreciate this, architects must be sensitive to the energy used in the production and assembly of materials needed for new buildings, from their origin to their end of life and subsequent reuse.

Statistics reveal that building construction consumes 40 percent of the raw materials entering the global economy every year. Interestingly, about 85 percent of the total embodied energy in materials is used in their production and transportation. Even before they reach the construction site, building materials consume large quantities of fossil fuels.

If all the hidden costs were specified in the balance sheet, the recycling of architecture would be perceived as the only rational strategy for the management of material resources. Modern construction methods are incredibly wasteful of resources. Designers sensitive to sustainable practices can establish
a recycling program to reduce the amount of solid waste resulting from construction and choose materials that are either recyclable or reusable (Anderson, 2008). In contrast, adaptive reuse is much more labour-intensive than new construction, because it involves the reconditioning the existing structures to adapt to modern day requirements.

This dependence on human resources encourages the local community to participate and potentially revives a vernacular rhythm in architecture. This activity can remind us that vernacular architecture is one cornerstone of our identity. There is a certain familiarity about city space, a comfort to know that the building we have known all our life has not changed much. We could navigate from Point A to Point B looking at buildings, aware at any time and any place exactly where we were because the structures around us have not changed and we identify with them.

**Sustainable Development and Art Education**

Architecture within art education is a rather new field of research, as is sustainable development. Traditionally, sustainable development has been connected with the environment, ecology and economy, but it also entails a strong social and cultural dimension. Art and education are changing at the national, regional, and global levels, which poses a challenge for art educators to check and update their views and practices and to develop art education that supports social wellbeing, equality, prevention of alienation, cultural interaction, and diversity.

Sustainable development also presupposes an interdisciplinary, inter-artistic, and holistic approach. We can approach the theme from many perspectives and fields of science connecting them with art to shed light on the relation of art education to ecological and environmental sustainable development, socially sustainable development, culturally sustainable development and economically sustainable development.

Jokela (2005) stated that environmental sustainability means place-making and participation, relation to nature and the environment is in a state of change because of urbanism and new livelihoods in rural areas, and because of a new awareness of ecological and environmental issues. At this point, some questions open: How can art education create new possibilities for participation in the development of nature environments, villages, suburban areas, and cities? What is the role of place-specific art, place-based strategies, and environmental design in art education? How big are the ecological footprints of the arts and art education? How can environmental awareness and responsibility be learnt in art education?
Social sustainability for this author means partnerships among communities. Building partnerships in education involves links between universities, schools, working life, and communities; between teachers and parents; between researchers and practitioners; and between the different levels and sectors of education. At this point, new questions open: How can we change professional cultures towards collaboration, collegiality, and commitment? Which strategies and practices may promote caring, participation, empowerment, democratic values, inclusion, and equality? What is the role of public knowledge, public art, and the Internet in art education?

Cultural sustainability is linked to questions of identities and cultural diversity. Enhancing and sustaining the sense of cultural and personal identity becomes emphasised in a world of globalisation, mobility, and multiculturalism. We can ask how a constructive dialogue between different cultural, professional, and social groups can be built. What is the role of traditional knowledge in art education within sustainability? How can new technologies be used in developing cultural sustainability? What contexts, relationships, and practices enable students, teachers, and researchers to develop their personal and collective identities and to strengthen their self-esteem in this world of rapid changes? How are professional identities shaped by dialogue and tensions between personal, professional, and contextual knowledge in this field (www.ulapland.fi/Insea2010)?

Economic sustainability has to do with creative capital. Art educators know that art education is valuable, but it remains unclear how the value is measured and described in society, what the methods of measuring the implementation and reporting of the results of sustainability in art and art education are, and how art education is connected to local livelihoods. It is also fundamental to analyse how education promotes cultural, social, and environmental capital, and how creativity can be understood as a resource for sustainable development and innovations (Jokela, 2007).

These are some of the questions that open when we consider sustainable development from a wide perspective in the field of art education. Their answers, of course, exceed the objectives of this paper.

In everyday school praxis, sustainable art education is considered from two main points of view. One is the art motif, which is that which is represented in the art work, and the other is the artistic technique, with which either the use of recycled materials or the re-use of materials is supported. Of course, these two aspects are not sufficient to encompass the complexity of the issue.
**Research problem**

To be able to elaborate significant pedagogic strategies that would promote awareness of the spatial environment, it is necessary to gather meaningful information. How students elaborate their representations of spatial values, and what influences their perceptions, interests and desires are fundamental questions.

In an attempt to obtain this kind of information, we carried out empirical research on the image of architecture and its links to the definition of identification with architectural space. It was held among first year secondary school students. This »pedagogic moment« is extremely important in the presented context, considering the role of education and its implications in the formation of a critical and conscious »user« of architecture and architectonic space.

**Method**

The research was specifically planned for the field of architecture within the subject Visual Art Education, where students develop their own projects in the different fields of visual arts and spatial design.

A total of 189 15–16-year-old Slovenian high school students from schools in Ljubljana participated.

The testing instruments included a test of initial achievements in the field of spatial design, a test of artistic creativity and a concrete task from architecture: the resolution of a project entitled »The Home of Your Dreams« in which students should be able to show improvements regarding their relation to spatial problems. The general strategy to guide the pedagogic process was based on experiential learning. Because the detailed presentation of the entire research exceeds the objective of this paper, I will present the results of three questions from the test of creativity.

Our aim regarding the answers to these three questions was to obtain an approximate vision of how students evaluate the image of an architectural object, what kinds of impressions they state, how they experience the environment in which they live, and on what basis they shape their vision of the world that is linked to the »image« of architecture.

Within the three cases, students were shown three pictures (10×13cm colour prints in their test form and projected on the blackboard at the same time).

Students had to respond to the following three propositions:

1. Take a look at the pictures of the three architectural objects below. The
pictures present the facades of three different buildings. Which one do you like most and why?

**Figure 1**: Pictures of different architectural objects used in the 1st question of the test. (Source of graphic material: Frampton, 1992, p. 313, 295 and 320.)

2. Take a look at the facades of the three architectural objects below. In your opinion, which one is suitable for our environment if you consider the materials they are built with, and why?

**Figure 2**: Pictures of different architectural objects used in the 2nd question of the test. (Source of graphic material: Frampton, 1992, p. 293, 200 and 306.)

It is necessary to state that the chosen images within the first two questions show images that were not familiar to the students and belonging to decidedly different contexts (Frampton, 1992). Engaging with them meant a process of analysis, abstraction and evaluation to be applied to the context in which they live.

In the case of the third question, the students were shown the three pictures printed on their test sheet and projected onto a screen. We made an introduction of the three places to guarantee that all the students could recognise them and remember their personal experiences in these places. It was necessary to check that all the participants knew the three proposed locations well. Our
question did not focus on the material characteristics of architecture that could be eventually appreciated on the photographs but on the »affective content« linked to the sense of belonging to a certain place.

3. You probably know these three places in Ljubljana: 1. »Kolisej«, 2. »Šumi« in front of Ljubljana’s Drama theatre; both have been torn down, and 3. The terrain on the left side of Ljubljana’s railway station that is practically abandoned. The three locations have been neglected for quite a long time. Do you miss any of the destroyed buildings? If you do, which and why?

Figure 3: Pictures of different places mentioned in the 3rd question of the test. (Source of graphic material: archive of the author).

The answers to the three questions were analysed in two phases: first, we considered the number of answers, i.e. the number of points each picture achieved in percentages; second, we analysed the qualitative contents of the given information in students’ explanations. We then attempted to elaborate a qualitative interpretation of the answers.

Results

The results were as follows in the case of the first question: Picture 1 was chosen by the 4.49 percent of the students, Picture 2 by the 48.31 percent and Picture 3 by the 47.20 percent.

Regarding the reasons for the election, students that chose Picture 1 stated »It looks exotic«, »It is not for our context«, one of the students wrote that »It could be built in a more developed country than ours«. Students that chose Picture 2 stated »It does not contrast with its surroundings«, »It is beautiful«, »It is a nice colour«, »Because of the shape of its windows and roof«, »It looks balanced«, »The natural surroundings of the building are exuberant and beautiful«, etc. Students that chose Picture 3 stated »It contrasts its surroundings«, »It
is special, different, imposing», etc. Half of the students said that they liked it »… because it looks modern, contemporary«; many said »It reminds them of a modern and big city«. A total of 39.57 percent of the students that chose Picture 3 stated »They like it because it looks monumental«.

**Graph 1:** Comparison of answers to question 1.

In the case of the second question regarding the building materials, the results were as follows: Picture 1 was chosen by 9.76 percent of the students, Picture 2 by 38.21 percent and Picture 3 by 52.03 percent. Regarding the reasons for their selection, the students that chose Picture 1 stated »They are different from those usually used in our context«, »They would contribute to diversify our space«, »They are modern« and »They have nothing to do with traditional materials.«

Students that chose Pictures 2 and 3 answered with highly similar statements: »They are traditional«, »They are from our surroundings«, »They are beautiful«, »They are statically appropriate«, »They are not in contrast with the environment, they are contemporary« etc.

**Graph 2:** Comparison of answers to question 2.

The results were as follows in the case of the third question: 32.12 percent of the students answered that they do not miss any of the destroyed buildings, and 67.88 percent said that they would eventually miss the building that was in a particular location. Within the percentage that affirmed they miss the destroyed
buildings, the building on Picture 1 was chosen by 34.19 percent of the students, the building on Picture 2 by 48.31 percent and the building on Picture 3 by 17.5 per cent. Regarding the reasons for their selection, the students that chose Picture 1 stated »The building was on their way home and that they did had not gotten used to the spatial void yet«, »…that the building was a kind of refuge they now miss«, »…that there was a kiosk and other shops so waiting for the bus was not boring« etc. A total of 29.00 percent of the students said it was a historic monument that should not be destroyed. Students who chose Picture 2 stated »It is in a special position in the centre of the city and it should not be a neglected location«, »It would be better to leave the old building if the new one would not be built in a reasonable period of time«. Some of them said that they do not remember the old building but they »…do not like how the place looks like now«. Some of the students mentioned that they once visited the exhibition at the City Museum, where they saw there was an interesting place, the »Šumi bar« in that building, so it should not have been destroyed. Within the percentage of the students who affirmed they miss the destroyed buildings shown in Picture 3, the majority said that they did not remember exactly which buildings stood there but that the location is awful now; it is not a pleasant welcome for tourists coming to Ljubljana by train.

![Graph 3: Comparison of answers to question 3, first part.](image)

**Graph 3:** Comparison of answers to question 3, first part.

![Graph 4: Comparison of answers to Question 3, second part (considering only the percentage - 67.88% - that affirmed they miss the destroyed buildings).](image)

**Graph 4:** Comparison of answers to Question 3, second part (considering only the percentage - 67.88% - that affirmed they miss the destroyed buildings).
Discussion

It is not possible to develop definitive conclusions without much more information about the experiences of the students in the city. Nevertheless, the analysed questions were particularly intriguing, because they focused on the general characteristics of the reception of architecture in the eyes of the students. The test allowed for open answers so students could make their opinions known using their own sometimes non-professional or even hyperbolic language. In spite of the fact that figures do show conceptual oppositions, the answers in the case of Questions 1 and 2 are quite similar and reflect a distinctive attitude regarding the values architecture fosters in students: it is in a way the materialisation of romantic goals and desires: »the noble savage« hidden in a beautiful hut or the dream of progress, modernity and monumentality as a condition for self-acceptance. At this point, equilibrium becomes significant, implying the pre-existence of a dialectical pair, a counterbalance. In any case, it is a reflection of the fact that there is always an element that is missing and that we should pay attention to what kind of ideas we oppose in our analysis (Livingston, 1993; Willis, 1999).

In the case of the third question, the opinions differ. Some of the students are not aware of their relation to space in general and to certain places in particular and how their changes affect them, while others are quite aware of that. Nevertheless, the majority feels space as a category that is not constantly linked to their own vital experiences.

It is possible to conclude that these results show a lack that could be eventually filled, (paradoxically regarding the third question) by architecture. The architect can become »the realiser of a dream«, filling the blanks of what individuals see as a lack in the elements that originate their identity and identification with a specific space.

At the level of the curriculum content, the information we obtained tells us that in order to support sustainable development it is necessary to generate positive values and objective information. Specifically, the answers to the third question reveal that positive values are fostered on the basis of individual, vital, affective experiences. Where there was no emotional experience, there was no attachment to a place. Space did not become place, and thus it did not affect anybody. In these conditions, it is not probable that we could expect efforts to preserve the built and natural environment in a state of equilibrium so that it should be enjoyed not only in the present, but also by future generations.

At the level of the pedagogic methods and strategies to support sustainable development within art education, we must highlight experiential learning
in its different phases: concrete experience doing something, reflective observation, abstract conceptualisation or reflection on the previous phases and active experimentation or elaboration of plans of future action. Reflection on space and the environment is certainly a wide and complex field, with aesthetics being only one of its aspects (Räsänen, 2003).

Recent thinking about the reposition of architecture into the social sciences (Beck, Giddens, & Lash, 1994), so that architectural development can be seen in conjunction with other areas of culture opens new questions and encourages the location of dialectical pairs that consider the balance between the individual and the social, the historical and the contingent, local and foreign, style and place, utopian and real etc. From this perspective, it also allows for the encouraging of strategies of sustainable development. In my opinion, this is a good starting point for the reflection about the implementation of concrete activities in art education.

The inclusion of such contents from the very beginning of elementary school and the education of future architects defining their role as a kind of »social service« shaping the physical and cultural context of life would be a significant challenge, enhancing considerable freedom regarding the formal aspects of architecture and at the same time an immense sense of responsibility.

**Conclusion: Conserving Cultural Energy**

The dichotomy of ideas and facts in architecture is also the reason we can affirm that art education at the beginning of the 21st century faces new challenges. It is obvious that a global perspective on the pedagogical process of art education requires the inclusion of a new, specific way of accurately evaluating activities that would enable students to experience architecture from different points of view: as users, critics and eventually as producers. In fact, the understanding of past as well as contemporary interventions requires a set of complex and rich experiences, which is one of the principal objectives of education at all levels. These experiences must contain a clear consideration of spatial sustainable development. Some illustrative facts were shown at the beginning of the article. It is probably not a coincidence that none of the students mentioned sustainable development in their answers.

The barriers that once separated the different fields of art no longer exist. New technologies have brought an entirely new range of experiences and possibilities. Dynamic socio-cultural changes affected artistic expression of all kinds, also within architecture; debates about the cultural identity of minority groups, issues of national identity, rapid changes in technology, and the advent
of the post-modern philosophy of fragmentation and plurality have reshaped assumptions supporting art, architecture and education. These transformations gave affected the way we approach and learn about architecture.

The evolution of our societies is reflected in our building types and styles. This relationship gives older buildings a character we value and identify with.

When a building of historic merit is preserved or restored for adaptive reuse, its cultural energy is also »recycled«. Old buildings preserve the local culture and identity and create a sense of belonging. In a way, we recycle embodied human resource energy along with material energy. We bring alive the past to be a part of the future, creating valuable connections through time.

In this context, the commitment to authentic and actual problems in our societies must be between the main objectives of sustainable art education. One of them is the awareness about the characteristics of the built environment. Our cities are, in fact, the results of time-space plasters that function as units of spatial experiences in everyday life. The oldest buildings are often urban milestones. They are iconic points of reference, and their simple presence brings out a collection of unique meanings to the collective memory of a culture. Composed of strong formal and symbolic elements, they are easily recognisable. Regardless of whether they are still used for their initial function, they nevertheless invite passers-by to contemplation. Their demolition injures cities’ images and memory in many cases. This theme – the recycling of architectural spaces instead of destruction – should be one of the necessary authentic tasks that could be realised within visual art education in order to develop awareness about the idea that it is possible to recover relevant objects in the urban framework that are no longer in use and to assign them new uses eventually associated to the contents of collective memory. An emphasis on the values of collective memory is undoubtedly another key goal of art education at all levels.

In effect, a global understanding of our past as well as our contemporary world requires this set of complex elements and rich »connecting experiences«, which should be one of the principal objectives of education at all levels, developing at the same time an unconditional connection of the art work with »everyday life conditions« and promoting the education of critical and responsible »perceivers« of the environment.

The next step in this research should be to consider the educational strategies and methods that would ensure an improvement in the awareness of the serious situation the world is facing. However, we should consider learning by experience as the basis of these strategies.
Reference


Biographical note

Beatriz Gabriela Tomšič Čerkez, PhD, was born in Buenos Aires, Argentina where she got her degree as an architect at the Faculty of Architecture and Urbanism in 1987. In 1988 she moved to Slovenia and in 1993 she got her degree at the Academy of fine arts at the University in Ljubljana. Later she got her Mr. Sc. in Sociology of Culture at the Faculty of Arts in Ljubljana. She is a professor for Didactics of Art Education at the Department of art Education of the Faculty of Education in Ljubljana where she defended her doctoral thesis on experiential learning and space design. Her fields of interest are visual arts education, pedagogy of architecture, spatial perception, theory of Architecture, geometry.