

CREATIVE EDUCATION: NEW APPROACHES AND TRANSFORMATION OF TEACHING METHODOLOGY FOR INSPIRING STUDENTS

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_ **Eva Vaništa Lazarević**

PhD, Full professor, University of Belgrade - Faculty of Architecture, eva.vanistalazarevic@gmail.com

_ **Jelena Marić**

PhD, Teaching Assistant, University of Belgrade - Faculty of Architecture, jelena.marić1989@yahoo.com

_ **Milena Vukmirović**

PhD, Associate professor, University of Belgrade - Faculty of Forestry, Serbia, milena.vukmirovic@sfb.bg.ac.rs

ABSTRACT

The modern era of technologies and artificial intelligence (AI), the high-level stress lifestyle and data infused perception is reflected into almost every aspect of life, including the present process of education. Furthermore, the COVID period took a toll on the already questionable euphoria of students today. The “million-dollar question” is how to make students be interested again. In order to achieve creative ideas, we have to implement the creative approaches in education. We, as educators, have to adapt, and transform the way we teach in order to be competitive in dealing with the with the collective attention disorders caused by contemporary overflow of information. In this paper we will present several educational approaches implemented in the elective course: “Architecture in context” at University of Belgrade, Faculty of Architecture. The teaching methodology of the course is based on participation of students in scientific organizations and institutions and collaboration with private and public enterprises. Students were highly motivated and showed better overall activity and exceptional teamwork throughout the process of active teaching. This is best manifested through the results of the course that include oral presentations of students in scientific conference of Balkan Architectural Biennale, publication developed with the participation of PE “Belgrade Fortress”, making the series of Podcast, and developing the student design competition for the most creative ideas in collaboration with “Hormann” company. This paper represents the possible benefits of creative education that is one of the crucial preconditions for the future methodology of architecture teaching for creating beautiful cities.

KEYWORDS _ *Creative Education, Students, Architecture, Participation, University of Belgrade*

INTRODUCTION

Teaching process at the University level is a rather rewarding and complex job and the professors undergo many challenges and issues during the teaching process. We live in the period of constant change, that is most of all, reflected in the technology. It has never been easier to collect information about every aspect of interest. Today, especially youngsters cannot imagine their life without some type of social media, while most of us depend on technology for professional work and income. We are slowly entering an era of AI that reflects on every aspect of life including education. According to several studies the modern way of life contributes to increased levels of stress contributing to already challenging education process. Furthermore, the COVID period represented one of the biggest challenges considering the immediate change to online education which further decreased the focus and creativity of students (Babbar & Gupta, 2021). This implies that approach to education, especially in architecture ought to be adaptable and resilient to transformations in order to preserve the same or higher level of quality (Shaheen, 2010).

Aim of this paper is to give an extended overview of the creative teaching methodology and outcomes on the example of the elective course at the University of Belgrade – Faculty of Architecture.

CREATIVE EDUCATION AND TEACHING METHODOLOGIES

There is a strong and active link between creativity and education, which can be said for different types and kinds of education, from elementary school up to higher education systems (Lin, 2011). In this paper we are focusing on the University level of education. In some cases education has seen as a barrier for creative approaches towards science, due to a traditional and outdated approach of gathering the knowledge without actual creative usage of this knowledge (Skaalvik and Skaalvik, 2016). During the last two decades and more different new teaching methodologies considering creative education were introduced (Hadzigeorgiou, Fokialis, & Kabouropoulou, 2012). Creative thinking, as a phenomenon, becomes the catch phrase of the 21st century due to its inclusion in many revised curriculums around the world (Craft, 2001; Tapinos, 2016).

There are many creative approaches regarding teaching methodology in education at the university level that can help engage students and foster creativity (Bell, 2010; Thu, 2018). One of the mostly used include: (1) **Project-Based Learning**: This approach involves designing projects that require students to work collaboratively to solve a real-world problem or create a tangible product. Project-based learning allows students to apply their knowledge and skills in a real-life circumstances way, which can be very engaging for students; (2) **Problem solving** and Flipped Classroom: In a flipped classroom, students watch lectures or read materials before coming to class, and class time is spent engaging in activities and discussions related to the material. Students are encouraged to use their knowledge in solving real life problems; (3) **Active Learning**: Active learning involves getting students involved in the learning process through activities like group discussions, debates, and similar exercises. By engaging with the material in this way, students are more likely to retain the information and come up with creative ideas. One of the most recent methodologies and maybe one of the most creative approaches is (4) **Gamification**: Gamification involves incorporating game-like elements into the learning process, such as challenges, imagination, points, badges, and maps. This approach can make learning more engaging and fun, and can encourage students to take more risks and be more creative in their thinking processes. Additionally, there are different **Creativity Exercises** that can result in producing creative thinking with students. Finally, incorporating creativity exercises into the curriculum can be a great way to encourage students to think creatively. These exercises can be as simple as brainstorming sessions or as complex as design thinking workshops or focus groups. By giving students the space to explore and experiment with their ideas, they are more likely to come up with truly innovative solutions and think "outside of the box".

Architecture as a research field has a unique learning and research methodology based on the

sensitive nature of artistic approach that requires unique techniques used in teaching processes and courses¹. Architecture faculties often use creative methods to involve students in creating quality results regarding both thinking processes and the design. One of the most applicable and used learning techniques in the field of Architecture and Urban design is the Project-based learning (PBL) that is an instructional approach where students learn by actively engaging in real-world and meaningful projects. In PBL, students work collaboratively to investigate and solve a problem or to design and create a product/project/idea. PBL provides an opportunity for students to develop critical thinking, problem-solving, collaboration, and communication skills. It also allows students to apply their knowledge in creative means in practical conditions (Thu, 2018). In the next section the approach and methodology of the course "Architecture in context" will be presented.

THE COURSE OVERVIEW_ "ARCHITECTURE IN CONTEXT"

The course "Architecture in context" is an elective course that has been a part of the courses at the faculty for more than 15 years developed and led by Professor Eva Vanista Lazarevic. The course is designed and accredited for the master level of academic studies of architecture, and today it is available for students from 1st year of Master Academic Studies of Architecture and Master of Integral Urbanism, and 4th year of Integrated Academic studies of Architecture. Each school year more than 30 students take part in the course.

The overall topic of the course is to explore Architecture in different context. More specific objectives include exploring the field of Architecture from different perspectives, not only spatial, social, or economic aspects, but also the dialogue in Architecture, media, publications, etc. Also, one of the positive aspects from the creativity point is that each school year the focused topic and methods used in this course are changing, adapting to current global issues, like pandemic or technical advances, as well as interests of students. This constant transformation is one of the key elements of staying in the scope of current events and trends on the global and individual level. One of the main topics range from analysing spatial characteristics of historical city centre areas, like Vračar Municipality in Belgrade, using the multi criteria analysis, to tackling global issues like climate change or urbanization and participating in scientific conferences and events like Balkan Architectural Biennale. Additionally, urban, historical, and architectural heritage was researched, such as the Belgrade fortress. Using the podcast as the method students expressed their interest in different topics regarding the urban issues and city transformation and growth. In order to deal with the topic of Architecture on different levels, as oppose the global issues and understanding of the city and space, the students also explored Architecture in detail. In collaboration with international companies, students have developed project proposals for creative usage of doors and windows in Architecture in the form of a student competition. The main teaching methodology of the course is based on participation of students in scientific organizations and institutions and collaboration with private and public enterprises. However, as each year the main topic of the course is changed, the methodology is adjusted to these changes. the steps of the course are evolving and transforming each year. Originally, they are most compatible with the concept of Project-based learning, and start with the detailed research and analysis, followed by analytical and critical approach, developing idea

¹ **Studio-Based Learning:** This approach is the cornerstone of architecture education, where students work in studios, often in teams, to solve design problems. This method encourages creativity, collaboration, and critical thinking. **Critique Sessions:** Critique sessions are a common practice in architecture faculties, where students present their design work to their peers and faculty members for feedback. This process helps students refine their ideas, learn from their peers, and develop their critical thinking and communication skills. **Design Competitions:** Design competitions provide students with opportunities to showcase their design skills and compete with their peers. These competitions are often sponsored by professional organizations or firms, and winning designs can lead to valuable exposure and recognition. **Design-Build Projects:** Design-build projects involve students in the construction process of their designs, allowing them to see their ideas come to life. These projects provide students with hands-on experience and help them understand the practical aspects of building design. **Site analysis:** Field trips are often organized to expose students to real-world design challenges and provide them with inspiration. Visiting construction sites, museums, and historic sites can help students develop a deeper understanding of the built environment and gain valuable insights into the design process. **Collaborative Learning:** Collaborative learning involves working in interdisciplinary teams with students from other disciplines, such as engineering, urban planning, and environmental design. This approach allows students to bring different perspectives to the design process and fosters creativity and innovation.

and vision, participation and collaboration and finally results that vary from podcast development and publications, scientific research to urban and architectural design. In the next section some of these results will be presented.

RESULTS_OUTCOMES OF THE COURSE

Over the last eight years of the course Architecture in Context, significant results were achieved. In this section the selection of the course outcomes is presented. Since the overall topic and methodology changes every school year.

School year 2015/16_the scientific conference

During the spring semester of 2015, the course “Architecture in Context” focused on the contemporary architectural issues within the urban setting of historical significance, such as the Vračar area. Over the course of two decades, this area gained popularity among investors, leading to the adoption of new detailed urban plans. Consequently, new buildings emerged within the familiar and “old” ambiance, sparking discussions and critiques regarding their quality, appearance, materials, proportions, height, and overall compatibility with the existing physical context. In light of these frequent discussions among students, the project provided a framework for conducting research on the extent to which the new structures either aligned with or deviated from the context, employing an evaluative approach based on a set of criteria.

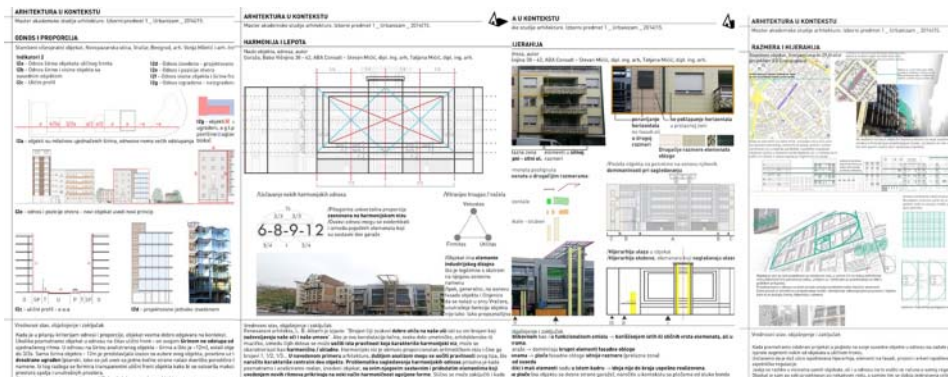


Figure 1: Part of the student research study that was published in the conference paper at Real Corp conference 2016; source: Eva Vanista Lazarevic, Milena Vukmirovic

The analysis encompassed the following dual criteria: [1] order and unity, [2] ratio and proportion, [3] scale and hierarchy, [4] symmetry and rhythm, [5] detail and texture, and [6] harmony and beauty. These criteria served as the foundation for qualitative and quantitative research, as each analysis assigned a score ranging from 1 to 5 based on how well the buildings fit into the context according to the observed criteria. In the final phase of the research, each student was required to identify a suitable and commendable example of good practice and provide a final assessment of the quality and character of the proposed and implemented interventions. The overall research culminated in a catalogue of new buildings, accompanied by critical reviews, which served as a professional contribution in relation to the current built stock in Belgrade. Consequently, the course not only fostered critical thinking skills among students regarding built objects but also trained them to consider the contextual aspects when formulating their intervention proposals.

School year 2017/18_BAB Student workshop “Belgrade calling 4 SPACE”

In the school year of 2017-18 more than 40 students from the course participated in the research student workshop called “Belgrade calling 4 SPACE”. The overall aim of the workshop was developing the future quality space in Belgrade, with the focus on crucial topics such as climate change, social and ecological sustainability, and rapid urbanization. Each student developed visions, ideas and criteria and indicators network research for the selected location in Belgrade. They presented their results, research and solution guidelines at the final workshop and conference day in the form of posters and presentation. Students were highly motivated because of the chance to present their research alongside with various scientific researchers and professors from highly valued international schools of Architecture.

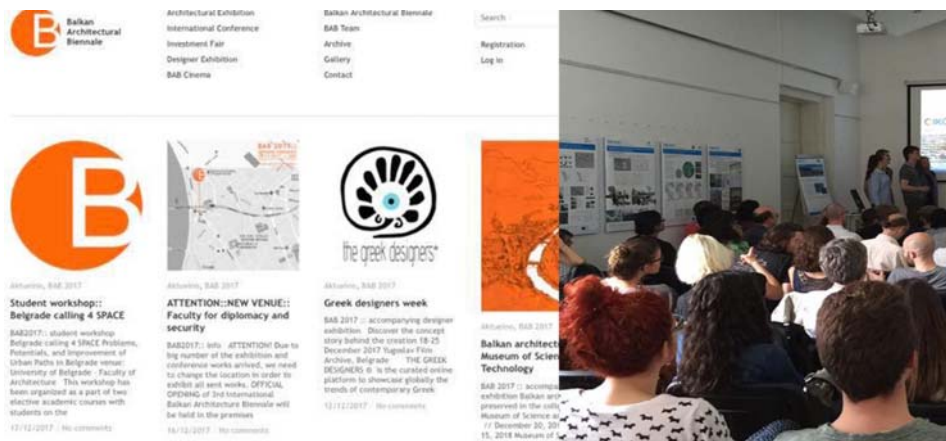


Figure 2: Student workshop and presentation as a part of the BAB Balkan Architectural Bienalle, 2017, source: Tatjana Mrdjenovic

School year 2020/21_Publication “Belgrade Fortress / heritage as a potential”,

During the school year of 2020/21 Students alongside with mentors developed Publication in participation with PE “Belgrade Fortress” and the director Marija Kuprešanin. Collaboration with Public institutions was beneficial for students enabling them to experience different forms of stakeholder participation, as well as to have all of the important detailed information and published material about the location, and unique guided tours of the whole area of Belgrade Fortress. Belgrade Fortress and Kalemegdan parks represent the largest fortress park in Belgrade, which at the same time represents the most important cultural and historical complex in Belgrade. This collaboration helped students understand architecture as a result of the influence of the environment both natural and social, on the one hand, and the man-made influence on the other hand. Students with mentors developed publication containing 246 pages divided into several sections. In this book the history and morphogenesis of whole Belgrade Fortress area and Kalemegdan park was presented, with identified problems and issues on the location presented with diagrams, photos and schemes. Also, students worked with PE “Belgrade Fortress” on determining the potentials of this area. Both detected problems and potentials were used to develop a series of guidelines and possible solutions for this area presented either by the good practice example or the urban design projects. Additionally, detailed maps with all the activities, structures, facilities, natural and built elements were presented in a form of a tourist maps. The publication aims to present in a creative way the elements of both the historical presentation, the current state, and the possibilities for future improvements.

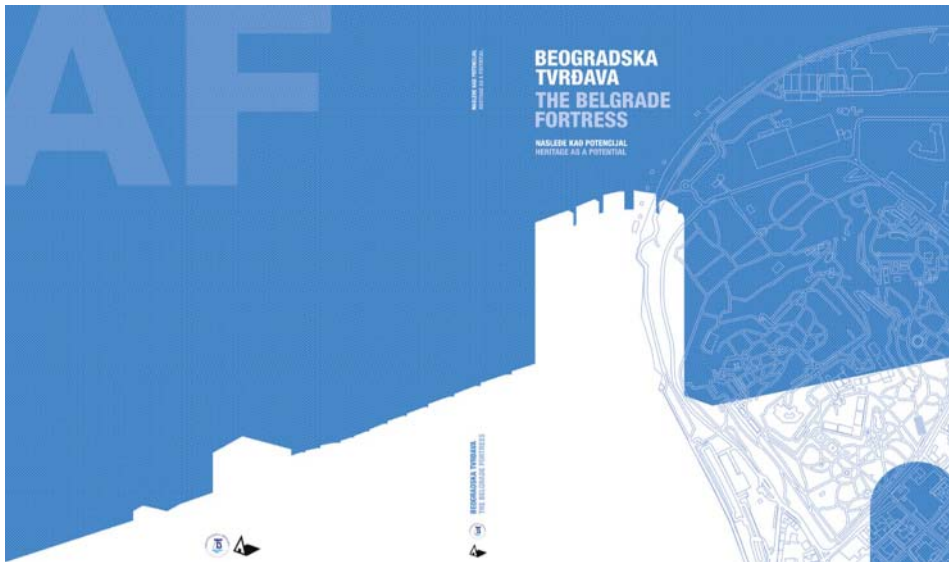


Figure 3: Cover of the publication "Belgrade Fortress / heritage as a potential", source: Jelena Maric

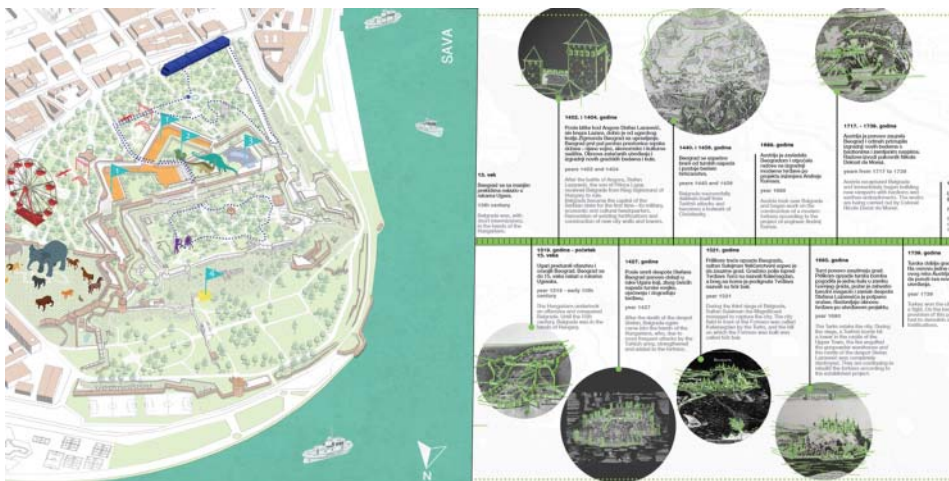


Figure 4: Student research as part of the publication "Belgrade Fortress / heritage as a potential", source: Jelena Maric, Marija Kupresanin

School year 2021/22_ Podcast – "Evina klasa"

In addition to the above mentioned, in the school year 2021/22 students were dealing with online education, and started using different media for their research, while mentors were trying out possible forms of online teaching or working in smaller groups of students. In that sense, different platforms, and social media became interesting choice for teaching. During the 2021. on the course "Architecture in context" an interesting idea of creating series of podcast shows was developed between mentors and students and it resulted in almost 10 episodes made with the approximate duration of more than 30 minutes, which are available on YouTube platform. Each podcast show had an interesting guest

and students chose the topics. The topics were different and aligned with current issues facing young architects in Serbia, and inspirational topics regarding the architecture, literature, infrastructure and social issues in Belgrade, such as massive new constructions, Belgrade Metro system, and other. One of the more interesting episodes included the topic of Architecture of festivals, where the guest was Dušan Letić, one of the initiators and main architect of “Exit” festival held each year in Novi Sad, Serbia.

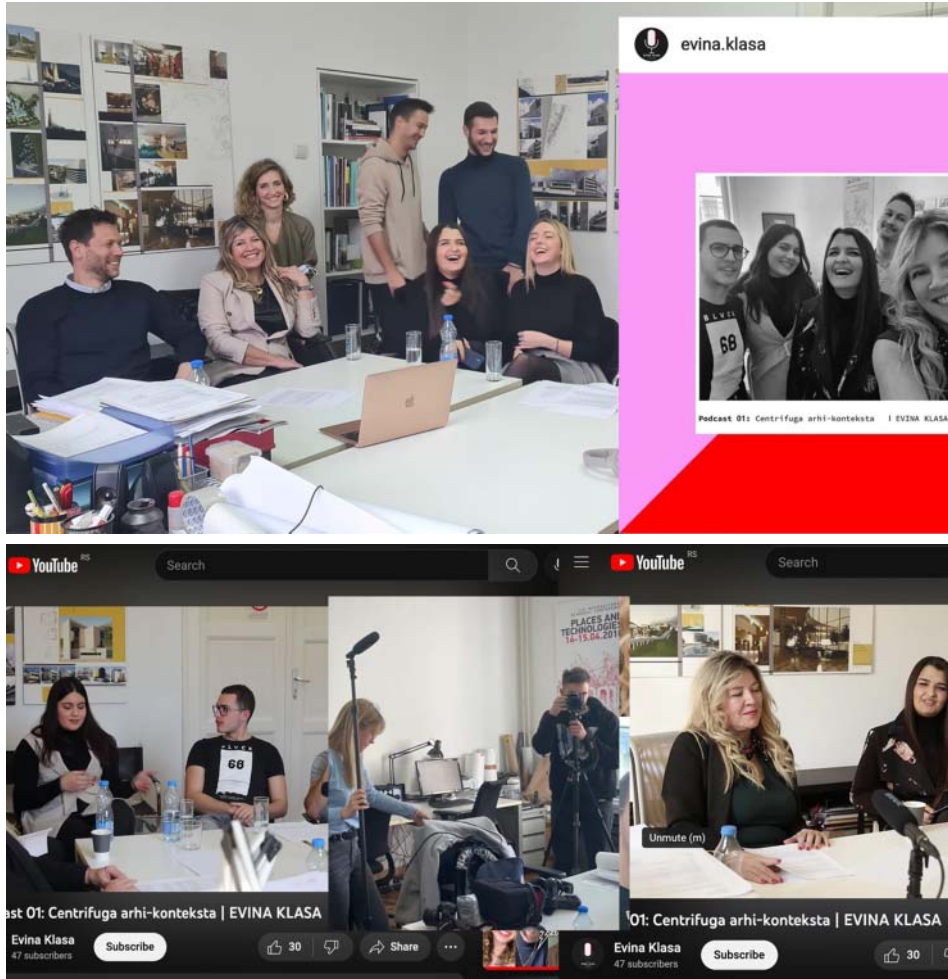


Figure 5&6: The process of making the podcast with students and guests at the Faculty of Architecture, source: Lazar Dimitrijevic, Lazar Petrovic, Ana Jovanovic

School year 2022/23_ “Poetics of Portals” student design competition

During the last school year, in 2022/23, students took part in the design competition organised by Faculty of Architecture and Private company. The main topic of the competition was to develop creative and unique ideas of implementing industrial doors into housing or public function buildings, even in open public space. Although it has long been clear that cooperation between academia and practice is useful and very necessary in education, it rarely happens. In this case, the initiative was made by the German company “Hormann” specialized in industrial and other types of doors. This collaboration resulted in the student competition organized especially for the course “Architecture in

context” with in total three prizes and two mentions. The jury was chosen by the students themselves: Prof. Zoran Djukanović, AF and arch. Maja Lalić, since the topics were urban recycling of industrial heritage, new forms of housing and building structure and façade, as well as social activism. Representatives of Hormann, Director Bojan Simović and arch. Nina Mijatović were included in the jury as well, from the aspect of the expertise in practice.



Figure 7: Students visiting the Hormann company, source: Bojan Simovic, Nina Mihajlovic

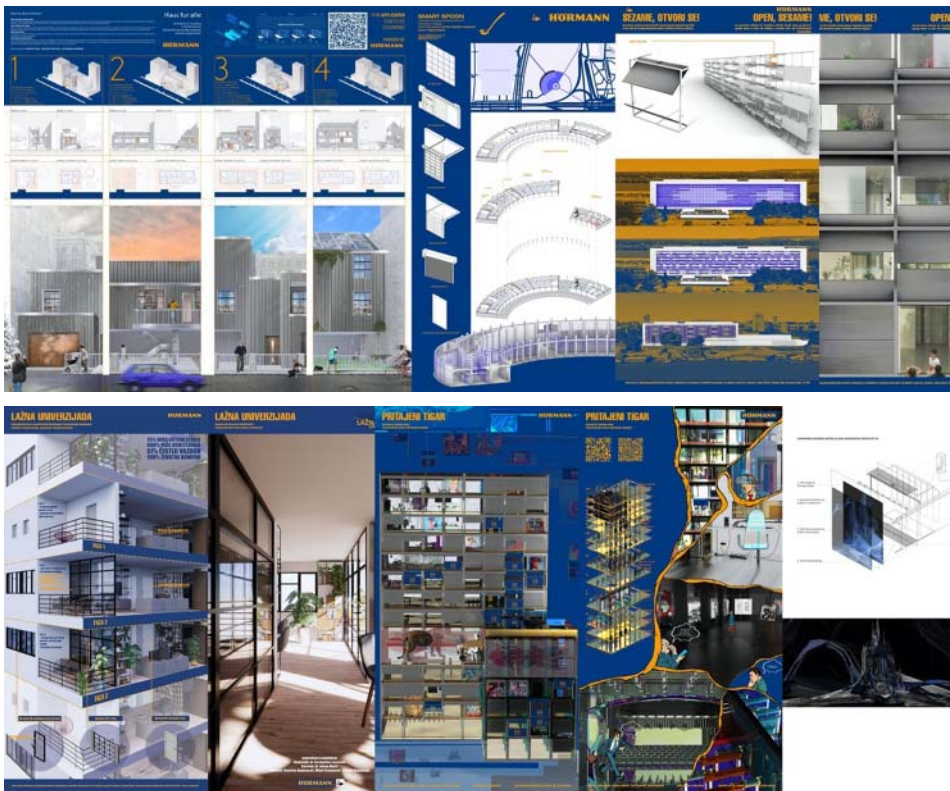


Figure 8-9: Awarded and mentioned student projects for the design competition 1st prize: Luka Stevanovic, 2nd prize: Jasmin Rastic, Simona Radojević, Marija Itov, 3rd prize: Illija Jovanović.

Students were divided into 10 groups that represented unique design concepts on aforementioned topics. The first-prized work of Luka Stevanović offered his own software, that could enable users to design their own building using the products from the Hormann company, which in practice will enrich Hormann's offer on the market. The great effort of the entire group of students on the course and a special kind of enthusiasm created by the competitive spirit was noticed. The event of the competition followed the student exhibition at the Faculty of Architecture, and it was covered and promoted by different local media and social media. The form of a student competition and participation of different stakeholders in the process of teaching influenced the students, who developed quality ideas and design projects and reported working twice as much in comparison to their usual working routine.



Figure10: Final exhibition and media coverage of the design competition, source: Maja Lalic, Jelena Maric.

DISCUSSION AND CONCLUSIONS

This paper presents the potential benefits of creative education, which is one of the crucial prerequisites for the future methodology of teaching, especially in architecture, where creative projects and creative thinking is expected from its students. In order to generate these ideas and concepts we must adapt to current global issues and transform the way we teach to be competitive in addressing the collective attention deficit disorder caused by today's modern and hectic way of life. Regarding the presented example of outcomes from an elective course at the University of Belgrade – faculty of Architecture we can conclude that bringing new and edited curriculum each year can result in gathering new ideas and engage students in more qualitative way. Students were highly motivated and demonstrated better overall activity and exceptional teamwork throughout the process of active teaching each school year. However, this approach includes more engagement not only for student, but also for mentors in organization of the class, as well as preparing collaboration with different stakeholders from architectural practice and public institutions. This paper could contribute to future research in the domain of transformation of educational methods and approaches in the architectural context, making education more based on creative thinking and creative approaches.

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