

## Rethinking art education as an interdisciplinary practice

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### Suggested Citation:

Vivoda, A. (2023). Rethinking art education as an interdisciplinary practice. *Global Journal of Design Art and Education*. 12(2), 34-48. <https://doi.org/10.18844/gjae.v12i2.8178>

Received from February 12, 2023; revised from April 15, 2023; accepted from June 20, 2023.

Selection and peer review under the responsibility of Prof. Dr. Ayşe Cakir İlhan, Ankara University, Turkey.

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### Abstract

The project encompassed the research of relations between various disciplines and interdisciplinary approaches in primary teacher education, and initiating cooperation with a nature park to create a platform for creative dialogue between visual and nonvisual arts and natural sciences, that is, botany. The initial goal of the project was the experience of a place-based art education project, which then extended to raising ecological awareness and addressing the need to preserve local natural heritage through several interrelated art educational projects. The project explored the points of intersection of arts and natural sciences. It also enforced the creative aspect of educational practice of prospective primary education teachers by combining the concepts of place-based education and thematic teaching method in a multidisciplinary environment as well as balancing fieldwork and the classroom learning process. A collaborative approach, interdisciplinary mentoring team, and students' independence to organize their time and plan the stages of their projects introduced a higher level of involvement and a stronger commitment to the research

**Keywords:** Art education; artist's book; botany; interdisciplinary research; printmaking.

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## 1. Introduction

The art department is situated in a small continental town in Croatia, dislocated from the main University Campus in a much larger city, which has both its advantages and disadvantages. The size of the department with around 150 students and 16 full-time members of the academic staff, dispersed throughout various artistic or more often scientific disciplines, motivates teachers to distinguish associates for different collaborative projects outside the Department or the University. Realizing how much the researcher's previous art education projects have significantly profited from the collaboration with professionals from diverse fields of study (Vivoda, 2019), this study proposes cooperation with the public institution Velebit Nature Park.

Velebit is the largest nature park in Croatia, an institution dedicated to protecting and preserving the regional natural heritage, with its headquarters situated in the same city, in the foothills of the mountain. The goal of my initiating the collaboration was to raise awareness of the natural heritage, affirm the values of the local community, promote the artistic development of my students, and encourage place-based art education by grounding the learning process in the local phenomena and students' creative practice.

### 1.1. Conceptual and Theoretical Framework

As teacher education is by definition a highly interdisciplinary field, it naturally entails gathering experts of very different profiles and backgrounds, and projects which require collaboration across various fields of science and arts, thus ensuring a highly motivating learning practice (Efland, 2002; Stokes-Rees, Moskowitz, Sun & Wilson, 2019). Aiming to provide a stimulating learning atmosphere for the students, the study decided to apply a thematic teaching method in an interdisciplinary learning process, interconnecting knowledge from different fields through practical creative research. The educational project was devised as a learning process that balances art and science, between the traditionally considered "cognitive, positivist approaches of science education" and "the more creative, affective, and sensory approaches of art education" (Inwood, 2008, p. 30), affirming the importance of art education in educational processes in general.

An interdisciplinary approach is virtually implied when teaching visual arts in a contemporary educational context which is strongly inclined toward overstepping the traditional frame of strict definitions of artistic disciplines (Inwood, 2008) and open to various kinds of collaborations with non-visual arts or other research areas and life experiences (Rosal, 2022). To employ arts to create a dialogue that intertwines different disciplines to facilitate a better understanding of the place in which we live and study, the study was motivated by the idea that 'Combining the arts, humanities, and natural sciences is essential for students to grow as creative and future-oriented members of society and provides the students with an opportunity to combine their knowledge of the humanities and science technologies with the arts, to introduce artistic activities into their daily lives, and to enhance their understanding in unfamiliar disciplines. The result is the development of students into future-leading creative talent. Therefore, interdisciplinary practice in arts education is essential for yielding future talent with the ability to think creatively beyond the students' environment (Kim, 2018, p. 180).'

The research was conceptualized with a strong intention to intertwine educational context and the processes taking place in the classroom with the local community, socially relevant issues, and ethical questions. Raising awareness of the importance of local natural heritage through several interrelated art educational projects has significant ethical implications; ecological awareness is a highly important part of educational processes in general. Many different reasons (evidence of human impact on climate changes, growing pollution, and plastic waste issues, to name just a few) have indicated the need for a stronger presence of environmental education, not only in science education but in general education processes, too. Related research has detected the neglect of botanical topics in science education up to the point that even the term "plant blindness" has been coined (Frisch, Unwin, & Saunders, 2010), which indicated the need to address the problem more broadly, especially in a community with a rich botanical heritage.

Inspired by place-based educational projects characterized by exploration of the local community and its surroundings, and hands-on experiences of environmental discovery and problem-solving (Haines & Hermann, 2011; Woodcraft, 2020; Monnet, 2022; Seo, 2022), the researcher decided to ground the students' creative projects in the environment, in the natural heritage and the community. Taking the environment, the endemic and the endangered botanical species as an integrating context across disciplines, mentored by an artist/art teacher and botanists, the students observed, studied, analyzed, and interpreted natural motifs and accumulated knowledge of botany as a starting point for their creative projects. 'Emerging from the particular attributes of a place' (Haines & Hermann, 2011: 47), this inherently experiential and multidisciplinary project delves deeply into the learning process and builds interconnections between the place, the self, and the community (Haines & Hermann, 2011). Furthermore, art was not considered as an isolated, solely individual practice, but a powerful tool for addressing important issues through collective action and active engagement of both teachers and students.

### **1.2. Related Research**

The fundamental ideas were filtered through the theoretical framework of previous research and combined the concept of place-based education with the thematic teaching method. Exploring the points of intersection between the arts and the natural sciences easily led to place-based art education (Smith, 2002; Inwood, 2008) in search of innovative means of expression. Combining the impressions of the Velebit panoramas, botanical abundance, and visual arts, the research attempted to make the learning process more meaningful and socially relevant for the students. The research employed the thematic teaching method (Kim, 2018) related to the place and combined perspectives of different research fields that explore nature narratives about practices employed in teaching art (Morawski & Dunnington, 2021).

Several studies demonstrate a positive correlation between comprehensive arts integration approaches, peer-to-peer professional collaborations between teachers, teaching artists, and other partners, and students' achievement and skills development (Corbisiero-Drakos, Reeder, Ricciardi, Zacharia, & Harnett, 2021).

## **2. Materials and Methods**

The study engaged in close collaboration with natural scientists, while at the same time, the research strived to maintain the integrity of the particular field of expertise as an artist and an art teacher (Meyer & Wood, 2019), to ensure that students and teachers benefited from their profound scientific knowledge and insights. The study encouraged them to focus and attentively observe the environment and acknowledge the exceptionality of endangered botanical species (Mack, 2003). The key questions at the core of the project focused on whether an interdisciplinary devised project could significantly motivate students' engagement to learn and rediscover local natural heritage through creative practice, as well as on the impact of the process on the quality of produced artworks.

### **2.1. Participants**

The project was conducted during two summer semesters in 2016 and 2017 at the art Department and the research participants were pre-service teachers who decided to sign up for the course. Out of 35 students enrolled per year, approximately 21 (in 2016) and 24 (in 2017) enrolled in the course motivated by the opportunity to participate in the project.

### **2.2. Procedure**

The art education research was initiated as a part of the Printmaking course within the Module of Visual Arts at the art department, striving to 'construct possible linkages among ideas often isolated by arbitrary subject boundaries' (Efland, 2002, p. 103). It interconnected botany and printmaking and involved studying visual arts by exploring the local natural heritage.

### 3. Results

Motivated by guest lectures accompanied by field learning, experts, the students explored the botanical specificities of the region and accumulated visual material through photography and drawing in direct communication with Velebit's natural beauty and its inhabitants, slowly building the base of their projects. Emphasizing the importance of Velebit as one of the most important floristic areas in Croatia and one of the most significant centers of biodiversity in Europe (Topic, Nikolic & Vukovic, 2010), the researcher familiarized the students with some of the 2000 floral species and subspecies that can be found on Velebit, highlighting the significant presence of the rare, endangered and protected ones. The researcher also pointed out the fact that a large number of distinguished botanical researchers from Croatia and the surrounding countries (Austria, Hungary, Italy, and the Czech Republic) made historically important research discoveries precisely on Velebit. Their work resulted in the discovery of new botanical species; for instance, the most famous endemic plant on Velebit is the Velebit dementia (*Degenia Vica*) which bears the name of a well-known Hungarian botanist Arpad von Degen. In addition, there are around 80 endemic species that adapted to specific life conditions, for instance: Croatian barberry (*Berberis Croatia*), various kinds of bellflower varieties (Window or Waldstein bellflower - *Campanula fenestrata* and *Campanula waldsteiniana*), Croatian Siberia (*Sibiraea Croatia*), Croatian bittercress (*Cardaminopsis Croatia*), different kinds of lilies (*Lilium*), *Hrvatska Bresina* (*Micromeria Croatia*), Kitaibel's primrose (*Primula kitaibeliana*) and many other equally important species (Kremer & Randic, 2019). The students were not familiar with the extent or diversity of endemic species on Velebit, apart from the Velebit degenia, which is quite commonly known in the country. In addition, they were not aware of its botanical importance in the wider European context, meaning that they intensively extended their knowledge in natural sciences relying on a series of lectures accompanied by individual and collective online and on-site research, strengthening their sense of the place (Frisch, Unwin and Saunders, 2010).

#### Figure 1

Ana Martinjak, *Chouardia litardierei* (Dalmatian Scilla), linocut, 2016.



Source: Photographed by the author

As a project initiator and coordinator, the researcher was in charge of scheduling and organizing activities, enabling research and creative engagement as well as guiding or facilitating the students' art projects. Having decided to conceptualize the course as an opportunity to transform the acquired scientific knowledge into ideas, forms, and images, the researcher conceived the art education project as a platform for dialogue, and art research process which is centered on students and where students are empowered with the responsibility to devise, organize and plan their own time and activities (Smith, 2002; Inwood, 2008). It was crucial to establish the process of education as an open-ended interdisciplinary discussion, emphasizing the importance of the creative research process 'where risk-taking is an important part and where insights and knowledge generated by the process are just as important a goal as a product' (Lilja, 2015, p. 18). Eventually, the students produced a collective *graphic herbarium* of endemic and protected species of lily, based entirely on their subjective decisions and preferences, thus expanding extensively their botanical knowledge and getting acquainted with numerous new plant species and subspecies, their habitats, and different life stages.

The differences between botanical art and botanical illustration were also an important topic – discussing the differences between the specific scientific representation of the plant species and its artistic interpretation (Tyrell, 2015).

### **3.1. Place-based printmaking practice**

Students explored composition variations, played with visual forms of the selected plants, experimented with the variations of graphic surfaces, contrasted rhythms of black and white areas, and simply enjoyed the creative aspects of the printmaking practice. They were simultaneously discovering the intensity of floristic abundance and studying the specific means of graphic form, mastering the technical skills and artistic possibilities of printmaking, specifically discovering the technique of linocut under my artistic and professional guidance. Linocut is one of the basic relief printing techniques, which means that it requires a drawing to, first of all, be transferred to the linoleum plate. Afterward, the plate needs to be treated and cut with specialized tools so it could be printed on paper or another printing surface (Hozo, 1988, p. 63-65). Linocut is one of the techniques that is often used to introduce students or pupils to the world of printmaking arts because the creative process does not demand invasive chemical means or complex technical knowledge. Furthermore, the printing process is usually executed using the printmaking press but can also, with a little practice, be done by hand. Linocut can be a simple printmaking technique, but at the same time, it is highly appreciated in graphic art circles because of its ability to capture the immediacy of the artist's gesture, expressive contrasting rhythms of light and dark spaces, and a variety of artistic possibilities and approaches.

#### **Figure 2**

*Ivona Ivic, Lilium martagon (Turk's cap lily), linocut, 2016*



*Source:* Photographed by the author

The process yielded quite interesting results, different approaches to drawing, and the treatment of the graphic plate. Most students approached both printing and drawing in a monochrome mode, exploring the rhythmic variations and symmetry, contrasting the pencil or ink drawing on the plain white paper and, afterward, transferring the drawings to the linocut plate. Transforming the drawing into another medium, of course, transformed the image and demanded further development of creative concepts. One group of students experimented with color, using one or more colors in making the print (as illustrated in Figure 4), which required several plates to be used and a high level of technical mastery in the process of printing, especially since the Department does not have a printmaking press and all the prints were made exclusively by hand.

The focus of the project was the experience of the place-based art education project, and becoming aware of how arts can be used to develop a deeper understanding of 'themselves and the place in which they live' (Inwood, 2008, p. 32). In other words, consolidates artistic knowledge with knowledge from other fields to improve the understanding of how diverse topics could be understood and addressed (Meyer & Wood, 2019). The research emphasized the process of learning as practice-based research, inciting the creativity of pre-service teachers and the collaborative potential between art education and other research areas. The students expressed a very high level of motivation and enthusiasm to engage in the project, which was reflected in the quantity and the quality of their works

that eventually inspired public presentations of the prints. The works were primarily presented at the exhibition space of the main building of the public institution Velebit Nature Park in the Balkans during the 6th national manifestation – Botanical Gardens Week (2016), accompanied by the workshop for elementary school pupils, and later that year, in the Laval Nugent Gallery in the capital city as a part of a juried young artists' group exhibition during the Festival of Botanical Art and Illustration.

**Figure 3**

*Students' edition of prints On Velebit's traces (Vskim tragovima)*



Source: Art Department, University of Zadar in collaboration with Velebit Nature Park (photographed by the author)

Subsequently, the study decided to print an edition of the selected linocut prints to make the project a permanent art education contribution of the art Department to the University of Zadar. The works of ten students were selected, providing insight into the variety of approaches to botanical heritage and creativity in the graphic interpretation of the motif. The graphic edition *On Velebit's Traces* was published in the fall of 2017, as a conclusion of a two-year art education project and the first printmaking edition at the University of Zadar, which has made me very proud. Studying Velebit's flora through graphic interpretation inspired different and more heterogeneous practices and the idea continued to develop and it eventually outgrew the initially set course. For instance, the prints were utilized to design the Nature Park's promotional accessories (backpacks and bookmarks), which were used to promote ecological awareness, and the need to preserve endemic and endangered plant species, thus introducing students to graphic design basics and enabling the public promotion of their work, but that was just the beginning.

**Figure 4**

*Backpacks designed after students' prints*



Source: collaboration between Velebit Nature Park and the art Department (photographed by the author)

### **3.2. Expanding art education possibilities**

Eventually, in line with the understanding that there are multiple means of communication with nature and a diverse potential to create (Morawski & Dunnington, 2021), the project developed into a book art project. Continuing the collaboration with the Nature Park, I decided to expand the research opportunities and conceive the project as art-based research that explores the synergy of natural sciences, visual narrative, and literary text, encouraging students “to uncover the stories the land has to tell” (Frisch, Unwin & Saunders, 2010, p. 150) or refer to an existing literary narrative they find to be corresponding. The continuation of the project was conducted within the course named Visual Interpretation of Children’s Literature within the Natural and Cultural Heritage module in the same Department during the winter semester of 2018. It involved 23 participants – the pre-service teachers attending the course - and was scheduled once a week for two school periods.

The course was introduced at my initiative to provide a platform for the interconnection primarily between various art subjects, visual arts, and literature, but also open to other disciplines (this time it converged with natural sciences). The course implements a thematic teaching method and the research themes vary each academic year, providing diverse learning opportunities. Specific techniques, materials, and particular skills developed during the course vary from year to year, depending on the elaborated topics, interests, and research paths of the students. Defining the task to design a picture book – a task that inevitably integrates different areas of research – requires overstepping ‘the existing limits in genre-based art education and highlights the potential of art for bridging the gaps among the different genres, and the sciences and humanities’ (Kim, 2018, p. 182). A thematic teaching method combined with an interdisciplinary practice and place-based art education provides a new learning environment for the students, motivates them to rethink and reassess their previous knowledge, and inspires them to reinterpret local natural heritage in a new context.

### **3.3. Artists’ Book as a creative process**

Learning/teaching through production, and working on group or individual cross-disciplinary projects proved to be very affirming for the creative aspects of the educational practice of prospective primary education teachers. The project resulted in extremely interesting work approaches - imaginative constructions of artistic herbariums of endemic and protected botanical species (Figures 5 and 6), or poetic interpretations of the landscape, which intertwined literary with visual forms (Figures 8 and 9). The project was not conducted in a specialized studio but in a regular classroom (just like the printmaking project the previous year), and was organized as a production laboratory (Gonzalez & Alemán, 2013), where students independently or in pairs worked on specific projects collaborating within the group and with the mentor/co-learner. Besides raising ecological awareness, and upgrading the initiatives described in the first part of the project, this time we also addressed the issue of ‘creativity as an outcome of collaborative activity rather than as a phenomenon that occurs entirely within the individual’ (Kim, 2018, p. 184), therefore stimulating students to work together and devise their projects by complementing each other, sharing or expanding the experiences of the mountain of Velebit.

By referring to the process of education as a place for dialogue and exploration ‘facilitating learning encounters’ (Atkinson, 2016, p. 3), the students were motivated to explore different opinions, perspectives, and methods, and negotiate artistic choices and decisions concerning their project. They reflected multiple aspects and points of view towards natural heritage, independently devising thematic framework – exploring the botanical diversity or searching for interconnections between the beauty of the landscape and literary texts, which resulted in the creation of highly original, problem-oriented and eclectic projects (Thun-Hohenstein, 2009). They proposed a production frame – a book as an art object, whose form and structure they were expected to question and individually define throughout the research.

While experimenting with the medium, they attempted to outline the visual form of the project through the intensive research process of accumulating ideas, elaborating the sketches, and

deciding on the appropriate formal solutions along the way. In such a learning atmosphere, the educator, instead of acting in the role of the teacher who provides the students with precomposed sets of knowledge that they need to internalize, becomes a collaborator, a co-worker who is involved in their projects by facilitating the research process and overcoming the creative and technical difficulties (Smith, 2002; Inwood, 2008). Expecting the students to elaborate on their projects, the researcher advised them on the possible working methods, specific techniques, or applicable materials, and provided the consult and guidance for each project individually, but eventually leaving the final artistic decisions to them. The education process became the space for growth and the development of both teachers and students or, to use the words of Professor Dennis Atkinson:

‘Rather than seeing pedagogic work only as passing on fixed bodies of knowledge or practice, yet without rejecting their importance, it would equally be concerned with creating the conditions for real learning to be set in motion which lead to transformation and the invention of the new worlds’ (Atkinson, 2016, p. 3).

The devised working method affected the classroom in a way that a group of 23 students was transformed into a cohesive collaborative space of discursive exchange of ideas and concepts. The group could not be characterized as a homogeneous aggregate, but rather as a cluster of co-workers respecting mutual affinities and comparative advantages and producing their work through collaboration. Many elements of the educational practices described here have been repeatedly applied and evaluated in art education, namely, teaching/learning through production, collective working process, etc. Art education could often be conceived as a partially structured educational process, without the rigorous and intransigent curriculum, which could even vary throughout the years, depending on students’ intellectual or personal qualities (Montalvo, 2013). The important thing here is that this particular research was conducted with pre-service teachers, not art students, whereby elements of arts-based research were employed and the principles of art education were introduced into primary teacher education.

**Figure 5**

*Petra Lopic, Matea Sokac , Floral opulence of Velebit (Biljno bogatstvo Velebita )*



Source: Handmade book; ink, pen, and crayon drawings  
(Photographed by the author)

The project embraced the idea of education as a process of ‘*joining with* learners in an ongoing exploring and experimenting with what the possibilities and potentials of learning might be’ (Atkinson, 2016, p. 3, original emphasis). Striving to respect students’ abilities and affiliations, providing a framework for their future art education experiments applicable in primary education, the research shifted the emphasis from learning specific visual arts techniques to place-based learning. The creative process resulted in a series of unique artist’s books, painted and hand-bound picture books as works of art, featuring the application of different drawing or painting techniques in the



illustrative part of the book, different relations to the text or botanical data, and various binding methods, depending on the initial idea of a particular project. The course hosted another inspiring lecture by the researcher and continued with field-based learning on Velebit (during a surprisingly warm and sunny October of 2018), to enable students to directly experience the mountain landscape. By aiming to enforce their creative potential, intertwining different areas of research, acquiring knowledge not only of the floristic abundance of Velebit's botanical species, but also of the history of botany, and inspiring historic collaborations between artists and scientists, the book project proved an adequate challenge. Students were expected to approach the task using their imagination and with enthusiasm and, at the end of the semester, we completed 10 unique projects.

#### 4. Discussion

As mentioned earlier, certain student projects reflected the premises of historical botanists, contemplating the idea of the herbarium, varying in their approach to the subject; some focused on realistic drawings of specific floristic species, while others created collections of imaginary plants, enjoying the painting experiments. Inspired by the first Renaissance attempts to systematize botanical knowledge and considering, for instance, the work of Leonhart Fuchs or Basilius Besler, German scientists and important patrons of botanical art (Tyrrell, 2015), some students created small, pocket-sized herbariums of selected botanical sorts that they studied through the field-based learning (Figure 5). They dedicated a lot of attention to drawing in pencil or ink, fostering subtle linear illustrations accompanied by the nomenclature of the plant species written in calligraphy ink.

Even though the books do not contain a narrative, they are constructed in a continuous rhythm exchanging visual and textual content in the recurring sequence of botanical categories and corresponding images. The drawings rely on a realistic approach to designated plants and are often developed upon photographic images, but they can hardly be referred to as botanical illustrations. They lack scientific precision and they do not tend to describe all the aspects of the plants but rather focus on the aesthetic of the black and white drawing and the richness of textures with only occasional color accents. They do not even include textual descriptions or information other than precise Croatian and Latin nomenclature, unlike Fuchs or Besler's herbals which contained descriptions of the plants and methods of their medical use (Tyrrell, 2019). In addition, they are far too limited as collections of drawings to be called herbaria in scientific terms, but rather subjective pictorial interpretations of the natural heritage fostering ecological awareness and an ode to the great efforts and patience of early botanists.

**Figure 6**

*Ana Kisur, Velebit's abundance (Vsko obilje)*



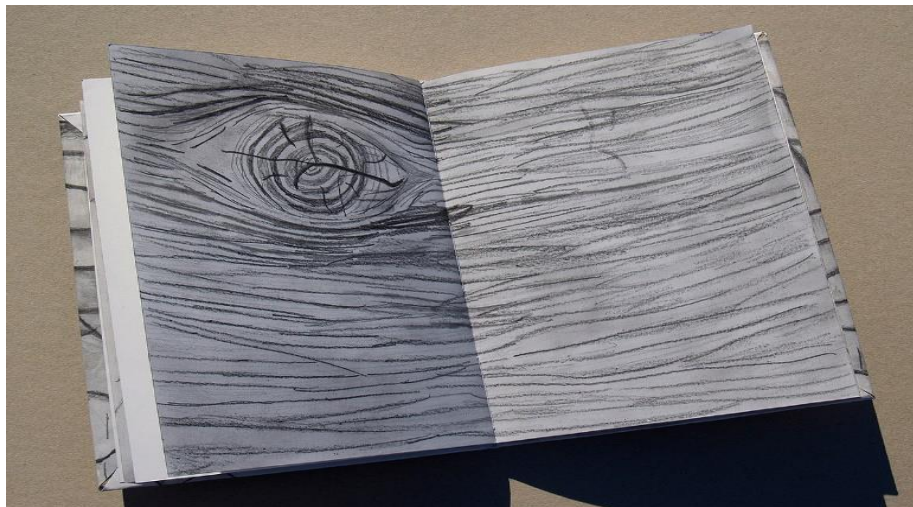
Source: Handmade book; ink and aquarelle drawings, (Photographed by the author)

Other students used as inspiration the works of natural historians of the 17<sup>th</sup> or 18<sup>th</sup> century, who gathered knowledge by traveling the world and personally painting distinctive floral species by hand, not sponsoring the draughtsmen as the aforementioned botanists did. I am referring here to the

work of Maria Sibylla Merian produced during her trip to South America or the works of Sydney Parkinson, who sailed with Captain Cook around South America, Tahiti, New Zealand, and Australia to work on Joseph Banks' *Florilegium* (Tyrrell, 2019). The effects of a vivid, colorful, and playful illustrative approach could be detected in several works that are more comfortable using the expressive potential of watercolor to present various plants in different life circles. Some examples depict highly representative botanical illustrations, describing plants in different stages –the flowering stage, the fruit development stage, and the ripening stage (Figure 6) – which demonstrates a careful, very observant, and long-term study of the selected plants. Other works are detached from the descriptive role of the herbarium and, although they have taken the existing species as the starting point of their artistic research, they are much more focused on the painting experiments, namely brush gestures and rhythmic composition of contrasting colors, than on actual depictions of the botanical species.

The students also considered the works of contemporary botanical artists, who find their inspiration in floral motifs but develop the motif in various directions. It is noticeable from the examples following this text that the students at some point discontinued botanical research and devoted themselves entirely to visual experimentation with specific shapes and structures, building collections of naturalistic macroscopic images, or quite imaginative drawings (Figure 7). Visual exploration of forms and surfaces led some of them to almost abstract drawings, and experimenting with visual scribbles and building collections of drawings merely inspired by the motifs of *Velebit*. The interest to study various drawing techniques and combine different tools to achieve the desired aesthetic intensity of a drawing prevailed; they focused on contrasting particular qualities of pencils, charcoal, or ink, basing their works on the tree bark motifs, which they sketched and/or photographed during the field trip.

**Figure 7**



*Handmade book; pencil, charcoal, ink, and pen drawings*

*Source: Monika Sabljak, Velebit (photographed by the author)*

One group of students, motivated by the experience of the landscape, sought to find appropriate elements and interconnections between their ideas, sketches, and literature. They approached botanical motifs in more diverse ways, exploring storytelling and interweaving textual and visual narrative. The choice of literary texts strongly indicates a subjective approach, various personal associations on the topic, or poetic relations with the landscape. For instance, one student decided to work with Vladimir Nazor's poem *Velebit* (Bratulic, 2014), interpreting a century-old poem authentically and expressively (Figure 8). Trying to allude to the atmosphere of the harsh mountain life and sturdy natural habitat through gestural brushstrokes and contrasting black ink drawings with white tempera smears, the student vividly articulated her subjective interpretation of the verses. Although some illustrations suggest certain characteristic toponyms or *Velebit's* vistas, they represent again more personal experiences of both poetry and the landscape, rather than descriptive images.

**Figure 8**

*Matea Niksic illustrating Vladimir Nazor's poem – Velebit*

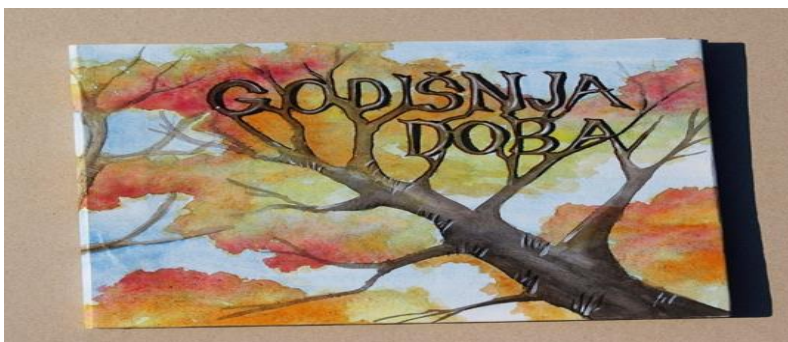


Source: Handmade book; ink, pen, and tempera drawings,(Photographed by the author)

Another work deals with the natural transformation of the landscape through the change of seasons by taking Zvonimir Balog's children's poem *Seasons* (Balog, 1996) as a starting point. Unlike the suggestive, gestural expressions in the former example, the *Seasons* picture book is composed of colorful landscape images painted in aquarelle (Figures 9 and 10). With a lyrical approach to seasonal landscape changes, the work places the poem in the Velebit's scenery, enriching it with layers of subjective experiences, instead of depicting the content. Organizing the picture book in rhythmic variations of pages, combining the pages with solely illustrative content opposite pages containing verses embedded in the images, the book invites the reader to expand the text and complement it with their memories or associations about the theme.

**Figure 9**

*Iva Maglic illustrating Zvonimir Balog's poem Seasons (Godisnja doba)*



Source: Handmade book; aquarelle (photographed by the author)

Other works articulated strong ecological and moral messages, for instance, illustrations of Shel Silverstein's story *The Giving Tree* (Silverstein, 1992). The picture book is painted in tempera and the narrative of the story addresses important questions on the relationship between civilized society and nature, one of the most important questions nowadays. It indicates the impact of ecological awareness the project raised and the possibility of an active engagement or an activist dimension of place-based art projects, a point the research considers especially important for pre-service teachers. The various examples best illustrate the students' heterogeneous intellectual, ethical, aesthetic even political concerns and considerations involved in their 'learning encounter' (Atkinson, 2016, p. 3).

All of the mentioned picture books approached the text as a raw material open to interpretation and used the power of the image to elaborate its presentation. The students developed the pictorial narrative as a highly subjective story that could never be characterized as a supplement to the literary text, but rather as an opportunity for the illustrator to enrich the story with their

interpretation (Vernic cited in Govedic, 2015, p. 89). Most of the books were bound in the codex form, which suggests that the narrative is experienced by the sequential turning of the pages. The students explored the possibilities of different image-text relationships, incorporating the textual elements into the image and varying the text-image relationship in the composition of the pages. Besides building the rhythm of the story in line with the dynamic interactions of image and text segments, they varied the focus and perspectives of the visual frames, altering the distance and the points of view of the reader (Sipe, 2001).

By analyzing the produced books, we were able to notice that the visual imagery, although very different in various projects, is consistently displayed throughout each book and has been appropriately suggested or implied from the cover. Some cover pages playfully elaborate the most prominent elements of the narrative, often interconnecting the front and back cover into a single composition, some even introduce the play with typographic variations of the title – for example, in the title *Godisnja doba (Seasons)* where the letters ‘grow out’ of the tree branches. The awareness of the importance of the cover page is individually articulated and it is generally conceptually continuing on the end pages – decorated with motifs that intimate the narrative and the atmosphere of the story.

In addition to providing a deeper understanding of the need to encourage creative engagement in educational practices, the project inspired the publication of one of the picture books produced during the project. Aiming to continue a series of art publications as part of the University editions, the art department published the picture book *Seasons*; based on the poem of one of the most prominent contemporary children’s authors, Zvonimir Balog, and visually interpreted by Iva Maglic, a second-year primary education student (Figure 10). It clearly emphasizes the importance of art in primary education as well as the strong interrelation of educational programs, respect for natural and cultural heritage, and the importance of artistic participation in various community issues. It also points to the need for stronger reflection on the role of arts in education, beyond the firmly divided media frames, which separate the visual from the non-visual arts and art form sciences, accentuating the importance of creative interaction and collaboration.

### Figure 10

Iva Maglic illustrating Zvonimir Balog’s poem *Seasons (Godisnja doba)*



Source: Handmade book, Aquarelle (Photographed by the author.)

## 5. Conclusion

In conclusion, one of the most important points of the project was to create a platform for the personal growth of my students, fostering an array of individual or collaborative projects departing from the same starting position, reflecting and creating in consideration of nature, abundant local natural heritage, and ecology. The study intended to stress the importance of art education and creative learning engagement in general education processes, and the perception of art as a living, multidisciplinary research space that allows students to ‘build a foundation for lifelong learning inclusive of the arts’. The method of combining the concepts of place-based education and thematic teaching method with an interdisciplinary mentoring team, in combination with fieldwork and classroom learning, proved to be very efficient and stimulating for all project participants. I intended

to sensitize the students to a new appreciation of the arts, which they could later develop and upgrade in their future teaching careers, emphasizing art not as a specialized commodity for the talented, detached from life and social reality, but as a powerful means of expression and collective action.

Furthermore, emphasizing interdisciplinarity and externality as one of the most important characteristics of place-based art education, undoubtedly increased students' motivation to learn and research thematically related sources from various perspectives (exploring botanical and ecological data on the one hand, or poetry and literary sources on the other). The students were mentored at the same time by an artist an art teacher and a botanist, through several interrelated art educational projects, accumulating botanical information to be able to accomplish art projects. Experiencing and exploring the environment, through an interdisciplinary perspective, not just acquiring knowledge, the students were establishing relationships towards the landscape.

Another important and innovative element in teacher training practice was students' independence to organize their time and plan the stages of their projects, which introduced a higher level of involvement and a stronger commitment to the research. The detected enthusiasm reflected in the creative practice as well, yielding encouraging results in artistic achievements; one collective graphic edition, and the publication of a student's picture book – the first projects of the kind at the university. Besides high artistic achievements, the project generated a new awareness of the place in which they study, and a new appreciation and consciousness for their natural environment and means of creative interpretation of the place, which could hopefully inspire future projects. In the process, they were discovering connections between natural sciences, ecology, education, and the arts, which would hopefully have implications for their future education practice as well.

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### Figure captions:

Figure 1: Ana Martinjak, *Chouardia litardierei* (Dalmatian Scilla), linocut, 2016.

Figure 2: Ivona Ivic, *Lilium martagon* (Turk's cap lily), linocut, 2016.

Figure 3: Students' edition of prints *On Velebit's traces* (Velebitskim tragovima), Art Department, University of Zadar

Figure 4: Backpacks designed after students' prints published in collaboration between Velebit Nature Park and the art department

Figure 5: Petra Lopic, Matea Sokac, *Floral opulence of Velebit* (Biljno bogatstvo Velebita), ink, pen and crayon drawings, handmade book

Figure 6: Ana Kisur, *Velebit's abundance* (Velebitsko obilje), ink and aquarelle drawings, handmade book

Figure 7: Monika Sabljak, *Velebit*, pencil, charcoal, ink and pen drawings, handmade book

Figure 8: Matea Niksic illustrating Vladimir Nazor's poem – *Velebit*, ink, pen and tempera drawings, handmade book

Figure 9: Iva Maglic illustrating Zvonimir Balog's poem *Seasons* (Godisnja doba), aquarelle, handmade book

Figure 10: Iva Maglic illustrating Zvonimir Balog's poem *Seasons* (Godisnja doba), aquarelle, handmade book