

INTEGRATING THE ARTS INTO KINDERGARTEN CURRICULUM: A CASE STUDY WITH CHILDREN IN CROATIA

Zlata Tomljenović¹, Aleksandra Smolić Batelić¹, & Svetlana Novaković²

¹Faculty of Teacher Education, University of Rijeka (Croatia)

²Faculty of Teacher Education, University of Zagreb (Croatia)

Abstract

Art in general and various art forms are woven into the everyday lives of children in kindergartens. Arts education contributes to activating brain areas associated with cognitive, social, and observational skills, motivation, empathy, and attitudes related to non-artistic learning (Ishiguro, Ishihara, & Morita, 2023; Russel & Zembylas, 2007). Artistic expression is an important form of communication for preschool children, while verbal expression is not yet (sufficiently) developed. Croatian kindergartens cultivate the artistic fields of music, dance, theater, literature and visual arts, which are complementary and intertwined in an integrated approach to preschool children's learning. As two distinct art forms, music and visual arts share many structural elements and processes and allow for meaningful integration opportunities that create natural synergies. When working with children, however, it is not enough to listen to music, sing, or paint, i.e. to use art only for entertainment, for the free development of the child, or the development of artistic skills. Preschool teachers should know what they want to achieve with these activities and be aware of contemporary approaches to learning and teaching to create the necessary conditions for children to acquire knowledge and skills through their experiences. This type of learning finds strong support in constructivist learning theories, which emphasize that children need to be actively involved in restructuring their prior cognitive concepts by questioning their thought processes and beliefs, asking new questions and reconstructing their existing understanding. The article presents a part of the project carried out in the kindergarten "Lišnjak" in Pićan, Croatia, in 2024. Using empirical examples, the innovative methods of using art to create new knowledge and skills based on the children's experiences are presented. The part of the project that included integrated artistic research activities in the field of music and visual arts is described, with a special focus on the concept of sound sculpture (sound art). The children were confronted with situations that challenged their way of experiencing, thinking, feeling, and expressing themselves. The process of carrying out the activities is described and examples of the children's learning are given. The results of the study show the positive effect of the activities carried out on the children's motivation, creative thinking, and artistic expression.

Keywords: *Constructivist learning theories, early and preschool education, music, project approach, visual arts.*

1. Introduction

Art in general and various art forms are woven into the everyday lives of children in kindergartens. Arts education contributes activating brain areas associated with cognitive, emotional, social and observational skills, motivation, empathy, self-identity and attitudes related to non-arts learning (Ishiguro, Ishihara, & Morita, 2023; Russel & Zembylas, 2007). Artistic expression is an important form of communication for preschool children, while verbal expression is not yet (sufficiently) developed. Arts education develops children's ability to communicate ideas and feelings in different forms and through different media (Bautista, Tan, Ponnusamy, & Yau, 2016). Croatian kindergartens cultivate the artistic fields of music, dance, theater, literature and visual arts, which are complementary and intertwined in an integrated approach to preschool children's learning (National Curriculum for Early Childhood and Preschool Education, 2015). Integrating the arts into the curriculum provides children with learning experiences that are intellectually and emotionally stimulating and based on making connections between new information and everyday life (Russell & Zembylas, 2007). The effects of integrated arts education are also transferable to other artistic and non-artistic domains (Samuelsson, Carlsson, Olsson, Pramling, & Wallerstedt, 2009). The topic of this study is the integration of music and visual art – two different art areas and forms with the common feature of expression in non-verbal language. Musical and artistic

language share many structural elements, principles and processes. There are numerous studies that have demonstrated the benefits and positive outcomes of integrating visual arts and music in education, particularly with early childhood and preschool children (Estrada & Nixon May, 2019; Hanna, 2014; Krogh & Morehouse, 2020). However, when working with children, it is not enough to just listen to music, sing or paint, i.e. to use art only for entertainment, for children's free expression or to develop artistic skills. Educators should understand the principles of arts education and know *why* they are creating a learning activity (learning objectives), *what* learners will gain from participating in a learning activity (learning outcomes) and *how* to create a stimulating learning environment. This type of learning finds strong support in constructivist learning theories, which emphasize that children need to be actively involved in restructuring their prior cognitive concepts by questioning their thought processes and beliefs, asking new questions and reconstructing their existing understanding (Tomljenović & Tatalović Vorkapić, 2020). In the constructivist approach, the traditional role of the teacher as a transmitter of knowledge is transformed into the role of designer of activities; teachers become facilitators of children's learning by finding ways to involve children in exploring and solving problems in an interdisciplinary way and making their own experiences by creating meaningful connections through interesting and challenging learning activities (Bautista & Ho, 2021; Ferrero, Vadillo, & León, 2021). One of the best learning models that promotes active learning is project-based learning (PjBL) and related problem-based learning (PBL). They represent active, child-centred teaching models that encourage learners to work in collaborative groups on real-world challenges to promote the acquisition of higher-order thinking skills through interdisciplinary learning (Ferrero et al., 2021). In both approaches, the emphasis is on personal research, group work and interactive conversations where children's independent expression of their own ideas, thoughts and actions is encouraged.

With this paper, we wanted to point out the importance of understanding the purpose and goal of art education in the context of constructivist theories, using methods that encourage children's exploration and creation in meaningful artistic processes. Although the main topic of the described project is the integration of visual and musical arts, it is important to emphasize that the learning content of all activities also included learning about nature, science, language, sustainability and other areas of children's life, as they were based on real life situations and took place not only inside but also outside the kindergarten. In this way, the activities contributed to the children acquiring deeper knowledge and skills not only on an artistic level, but also in a broader sense.

2. Method

2.1. The problem and the goal of the research

The aim of this study was to investigate the possibilities of integrating visual arts and music in teaching children aged 3 to 6.5 years. The research aimed to explore innovative methods and activities based on the constructivist pedagogical approach, and to investigate their effects on children's performance in terms of motivation, social interaction and creativity. The integration of artistic activities is not uncommon in kindergarten, but the way in which these activities are carried out is important. There is still a perception among some educators that artistic activities are for entertainment, children's free expression or the development of artistic skills. However, through arts activities, children can develop cognitive skills, explore, problem solve and develop creative and critical thinking in the same way as in other areas. The entire project was carried out in two cycles in the kindergarten „Lišnjak“ in Pićan, Croatia. This article presents the second part of the project, which was carried out in 2024 and included artistic research activities in the field of music and visual arts in a multimodal environment, focusing on the concept of sound sculpture (sound art). The study also aims to answer the following research question: *Does arts integration based on constructivist principles help to improve children's motivation and social and creative skills?*

2.2. Participants

There are two pedagogical groups in the "Lišnjak" kindergarten. The study was conducted with both groups, in which there are children aged 3 to 6.5 years (24 children in total). The groups are led by two kindergarten teachers who conducted research activities. Before and during the study, all necessary procedures were carried out to ensure that the ethical principles for protecting the privacy of the participants were observed.

2.3. Data collection

The research was based on a qualitative case study design. For the purpose of this research, data were collected by observing the activities carried out, taking notes, photographing and recording the activities, analysing the notes and recordings and drawing conclusions based on the material collected,

and interviewing the kindergarten teachers in a semi-structured form. The questions were open-ended and included information about the kindergarten teachers' work experience, observations during and after the study in relation to the research question, and opinions on the advantages and disadvantages of the activities carried out with children. The notes were audiotaped and transcribed. The research indicator checklists were created to help the kindergarten teachers assess the degree of change in children's motivation, social interaction and creativity. The checklist for motivation included items such as children's retention in the activity, concentration and level of involvement in the process. The social environment checklist included items on the level of interaction with peers, willingness to participate, self-expression, self-confidence and attention regulation. The creativity checklist included items on the expression of specific creative skills such as unusual imagination and unusual visualisation of emotions and experiences through verbal and artistic expression, unusual ideas, humour, richness of artistic expression (through use of colours, shapes, lines, composition, use of voice, singing), synthesis of experiences, reflections, thinking

2.4. Description of activities and discussion

At the beginning of the project, two online meetings were organized with the director and the kindergarten teachers, during which the idea, purpose, objectives, methods for conducting the research and the activities to be carried out with the children were presented to them. The research in the second cycle consisted of three sets of activities. Integrated artistic activities were carried out according to the interests and abilities of the children and teachers. Each activity began with open-ended questions that encouraged the children to reflect, express and connect with their environment and past experiences and feelings. The first set of activities revolved around the question Can we see/feel/show sounds? The experiment was carried out with a "device" consisting of a metal pot into which a loudspeaker was inserted. The pot was covered with hard aluminum foil on which various loose materials (seeds, plastic balls) were placed. The sound was transmitted using the "Frequency Generator" mobile application. At different frequencies, the loose material behaved differently on the aluminum surface and formed different shapes. The next art activity began with questions such as – Can sound have color and shape? The children were shown the abstract artwork of some artists who painted their experiences with music (Kandinsky, Klee). After that, the children themselves tried to depict music through painting, using tempera and collage techniques. The next activity was making a joint sound sculpture called Rain, of connected pieces aluminum foil joined together on which they had previously drawn a drawing of the sound of rain and wind (Figure 1). The second set of activities began in the outdoor area of the kindergarten. By guiding communication through questions and encouraging inference, the children became aware of objects in nature and the environment that produce sounds (e. g. the sound of trees, streams, rattling wires, etc.), the feeling that sounds evoke, and the interdependence of the structure of objects and the sounds they produce. The next activity took place in the kindergarten and involved looking at examples of sound sculptures on You Tube. The children were shown video clips of the artists Zimoun and Pinnucio Sciolo as well as some other examples such as a wave organ and a wind harp. The children tried to work out for themselves how the sound was created in the examples shown and the conversation also turned to the visual features of the sculptures. The children then began to make a sound sculpture together. The process involved a collaborative 'painting' of music by creating a free-standing installation on a wooden structure previously made with vertically stretched strings of ropes. The children added strips of coloured paper and small musical objects made from beads, pieces of metal, etc (Figure 2). The third set of activities related to rhythm research. The children listened to music, verbalized their observations of changes in rhythms and demonstrated them with movement in space. The next activity was to create a picture using wooden sticks with absorbent cotton covered in fabric attached to the ends. Pieces of music with different rhythms served as a sound stimulus. The children dipped the sticks in the paint and 'drummed' them rhythmically on the paper, transferring their own experiences with music into an artistic interpretation of what they had experienced. In the next activity, the children played with cardboard tubes made from recycled paper, which they used to create their own rhyming combinations. After a discussion about possible ways to create a sound sculpture, the children and their teachers realized the final version of the interactive mobile sculpture (Figure 3).

The above activities encouraged the children to develop associative thinking, creative expression and the ability to transfer experiences from one medium to another. The children became aware that sound does not necessarily have to be experienced only through the ear and that the experience of music can be multidimensional, even synaesthetic. With the artistic and exploratory activities carried out, we wanted to emphasize the importance and benefits of integrated activities that promote the development of children's cognitive, social and creative potential. The children were confronted with situations that challenged their way of experiencing, thinking, and expressing themselves. The activities are presented in the form of cooperative play, as play is the most natural way for children to learn. In the research we

focused not only on the product but also on the process of work, i. e. the process outcome - the way children and educators participate in the activities and their interaction, originality of ideas, imagination, motivation, exploration of materials and environment, problem solving, purposeful action and meaningful learning. The activities were based on constructivist pedagogical principles that promote the acquisition of new knowledge and skills through hands-on teaching, working with open-ended materials, collaboration, exploration and self-directed learning. Providing a constructivist learning environment enables internalization and a deeper understanding of the learning content (Richardson, 2005).

The results of the study showed that the activities carried out had a positive effect on the majority of the children who took part in the study. The conclusions were drawn on the basis of the teachers' statements during the interviews. The children's increased motivation was reflected in their commitment and concentration on the activities, in their anticipation of the next activities and in their communication with teachers and peers. „Listening to appropriate music while carrying out activities contributed to greater motivation, as the children calmed down more quickly and concentrated on the actual work. However, it is interesting to note that the three-year-olds returned to the same stimuli after abandoning certain activities, usually carrying different toys with them. They supplemented the artistic stimuli offered, observed what older children had done with the stimuli in the meantime and helped them to finish what they had started.“ (teacher K.S.). Increased attention and concentration was mainly observed in older children, while interest waned more quickly in three-year-olds, taking 15-20 minutes for each activity, which is to be expected. Progress was also observed in the socio-emotional area: Teachers reported children's increased desire to participate in the activities, positive attitude, increased social engagement, verbal communication and interaction with peers, mutual cooperation, higher self-confidence, attention regulation and general satisfaction due to new experiences. Most of the children showed more courage and confidence in expressing their own thoughts and feelings than in the usual kindergarten activities. After completing activities, the older children were happy to participate in a conversation about the experiences they had had and to express their own ideas and thoughts. This is an important segment as knowledge, especially at a child's early age, is not only the result of cognitive processes, but also of emotions experienced. The positive effect of the activities carried out was also reflected in the children's creative thinking and expression, visible in the richness of imagination, unusual visualisations and sound formations, different approaches to the expression of lines and shapes, richer expression with colours and unusual combinations of materials. In some children, a complete concentration on the creative act, the *flow*, was observed (Cseh, Phillips, & Pearson, 2015). Considering all these results, we can conclude that the answer to the research question: *Does arts integration based on constructivist principles help to improve children's motivation, social and creative skills?* is positive.

Finally, the role of educators should be emphasized once again, whose professional approach to working with children is a key factor in the quality of the educational process. The use of appropriate learning methods can significantly improve children's engagement and enjoyment of the work and thus the effectiveness of the teaching-learning process (Li, Zhou, & Chen, 2018). In general, educators often feel that they are not sufficiently competent to teach effective practices when it comes to applying more complex work models such as interdisciplinary learning, integration of activities, problem-based and project-based learning. However, these problems can be mitigated or overcome through better curriculum design and the provision of professional teacher training and support (Zhang, 2019).

Figure 1. Sound sculpture I.



Figure 2. Sound sculpture II.

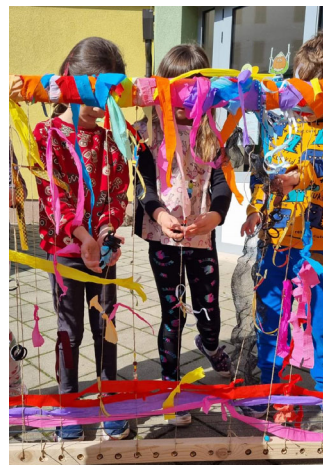


Figure 3. Sound sculpture III.



3. Conclusion

Many authors have emphasised the importance of the arts in children's education for their cognitive, affective and social development (Eisner, 2002; Ishiguro, Ishihara, & Morita, 2023; Mazepa-Domagala, 2021). The purpose of this study was to contribute to the field of art integration in the kindergarten curriculum by describing empirical examples and innovative methods based on constructivist pedagogical approaches to using arts to build children's knowledge and skills and to promote meaningful, in-depth learning. Their use contributed to the children's better understanding of the characteristics of musical and visual language and the possibility of translating music and sound into visual experiences and vice versa. The results show a positive impact on children's motivation, social engagement and creative thinking and expression. The research findings can help educators better understand the effect of project- and problem-based learning and design their integrated activities according to these principles to improve children's learning outcomes. The limitation of the study is that it was only conducted in one kindergarten with a small number of participants. It is certain that a longer study is necessary for a significant change in the children's development, also taking into account the use of additional measuring instruments. A longer research period could also include the development and application of more systematic and specialised teacher training in the integration of arts with other disciplines

References

- Bautista, A., & Ho, Y. L. (2021). Music and movement teacher professional development: An interview study with Hong Kong kindergarten teachers. *Australasian Journal of Early Childhood*, 46(3), 276-290.
- Bautista, A., Tan, L. S., Ponnusamy, L. D., & Yau, X. (2016). Curriculum integration in arts education: Connecting multiple art forms through the idea of 'space'. *Journal of Curriculum Studies*, 48(5), 610-629.
- Cseh, G. M., Phillips, L. H., & Pearson, D. G. (2015). Flow, affect and visual creativity. *Cognition and Emotion*, 29(2), 281-291.
- Eisner, E. W. (2002). *The arts and the creation of mind*. Yale University Press.
- Estrada, T. C., & Nixon May, B. (2019). Building Bridges With Bach: Syntegration of Music and Visual Art. *General Music Today*, 32(3), 37-42.
- Ferrero, M., Vadillo, M. A., & León, S. P. (2021). Is project-based learning effective among kindergarten and elementary students? A systematic review. *Plos One*, 16(4), e0249627.
- Hanna, W. (2014). A Reggio-inspired music atelier: Opening the door between visual arts and music. *Early Childhood Education Journal*, 42, 287-294.
- Ishiguro, C., Ishihara, T., & Morita, N. (2023). Extracurricular music and visual arts activities are related to academic performance improvement in school-aged children. *NPJ Science of Learning*, 8(1), 7.
- Krogh, S. L., & Morehouse, P. (2020). *The early childhood curriculum: Inquiry learning through integration*. London: Routledge.
- Li, E., Zhou, Z., & Chen, X. (2018, August 2018). Edge Intelligence: On-Demand Deep Learning Model Co-Inference with Device-Edge Synergy. *MECOMM'18: Proceedings of the 2018 Workshop on Mobile Edge Communications*, 31-36.
- Mazepa-Domagala, B. (2021). The Model of Specialised Artistic Competences of Early Childhood Teachers. Conceptual Approach. *The New Educational Review*, 1 (2021), 161-173.
- Nacionalni kurikulum za rani i predškolski odgoj i obrazovanje* [National curriculum for early and preschool education], Narodne novine 5/2015.
- Richardson, V. (Ed.). (2005). Constructivist teaching and teacher education: Theory and practice. In *Constructivist teacher education* (pp. 13-24). London: Routledge.
- Russell, J., & Zembylas, M. (2007). Arts integration in the curriculum: A review of research and implications for teaching and learning. In L. Bresler (Ed.), *International handbook of research in arts education* (pp. 287-312). Dordrecht: Springer.
- Samuelsson, I. P., Carlsson, M. A., Olsson, B., Pramling, N., & Wallerstedt, C. (2009). The art of teaching children the arts: Music, dance and poetry with children aged 2–8 years old. *International journal of early years education*, 17(2), 119-135.
- Tomljenović, Z., & Tatalović Vorkapić, S. (2020). Constructivism in Visual Arts Classes. *Center for Educational Policy Studies Journal*, 10(4), 13-32.
- Zhang, X. (2019, August). Study on the Basic Strategies of Infant Art Education of Preschool Education Speciality in Colleges and Universities. In *5th International Conference on Arts, Design and Contemporary Education (ICADCE 2019)* (pp. 652-655). Dordrecht: Atlantis Press.