

# Exploring the Integration of Artful Thinking as an Innovative Approach to Foster Critical Thinking Skills

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## Abstract:

Designed by the Harvard University Project Zero team, Artful Thinking is basically a program that aims to improve students' awareness of art and increase their critical thinking skills by interpreting works of art and discussing them. In this way, students will acquire twenty-first century skills such as critical thinking and aesthetic understanding. The primary objective of this research was to investigate the impact of the Artful Thinking program on the development of critical thinking skills and attitudes towards art in 6th grade students, by implementing it as action research. This study was conducted in a middle school in Gaziantep, Turkey. 23 students and a Turkish teacher participated in the study. A total of twenty-four works of art (paintings, graffiti and ancient mosaics) were shown to students over eight weeks. Students expressed their opinions about each picture for 10-15 minutes. In order to make the students think in higher-order about art, the teacher asked questions prepared by the researcher. Thus, students were enabled to develop critical and higher order thoughts about the paintings. The findings from the students, teacher, and researcher indicated that the Artful Thinking program had a favorable impact on the students' perceptions of art, and that the students' cognitive abilities and capacity for articulation were enhanced by this program.

## Keywords:

Artful Thinking, Critical Thinking, Creative Thinking, Thinking Skills

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## INTRODUCTION

The literature on critical thinking has roots in three main academic disciplines: philosophy, psychology and education. While the philosophical approach traditionally focuses on the formal application of the rules of logic (Lewis & Smith, 1993; Sternberg, 1986), the psychological approach involves the mental processes, strategies and representations that people use to solve problems, make decisions and learn new concepts. The educational approach is based on classroom experience and observations of student learning, which is different from both philosophical and psychological traditions (Sternberg, 1986). Art, as an expression of the individual's innate urge for self-expression, serves as a catalyst for fostering independent thinking in individuals (Ülger, 2015; Kırıçoğlu, 2002). Understanding, interpreting, and evaluating art is an expression of critical thinking, whereas creating art is an expression of creative thinking. A number of theories that understanding, making sense of art, reflecting on art, chatting, expressing opinions, and discussing art can help students develop critical thinking skills (Freire & Macedo, 1998; Knight, 2010). The effect of art education on students' higher order thinking skills is a topic worthy of research. Upon examining the literature, it was seen that the effects of art on creative thinking are frequently addressed, but the effects of art on critical thinking are not sufficiently emphasized. A work of art can be an opportunity for the development of critical thinking for art lovers as well as a product of the artist's creativity. Therefore, examining the effect of artful thinking on critical thinking is a noteworthy issue.

Upon examining the curriculums developed by the Ministry of National Education (MoNE) of the Republic of Turkey, it becomes evident that the objective is to nurture students who possess critical thinking skills and are capable of making meaningful contributions to society and culture. Furthermore, one of the curriculum's goals is to train individuals who have developed aesthetic sensitivity with verbal reasoning (MoNE, 2023). In this context, including original projects can enrich the education program in terms of improving students' critical thinking skills, gaining aesthetic sensitivity and contributing to culture. The Artful Thinking program can be considered as an effective approach to achieve these goals within the framework of critical thinking activities.

The Artful Thinking program, developed by Harvard Project Zero and Traverse City Area Public Schools, aims to both increase their awareness of art and improve their thinking skills by enabling K12 students to think deeply about a work of art (Tishman & Palmer, 2007). According to the Artful Thinking Final Report (2006), the purpose of the Artful Thinking approach is to strengthen the thinking and learning of students by regularly using visual art and musical works while applying the curriculum to teachers.

This program is designed as classroom teachers express their opinions about a work of art orally or in written for ten to fifteen minutes with their students in their classes. Two of the seven sub-dimensions of the constructivist approach environment are based on "finding discussions and interviews" and "sharing ideas with others", allowing students to

develop original thoughts about the work of art and express their thoughts freely under the leadership of the teacher. Thus, students not only develop their ability to think deeply about the work of art, but also learn to respect the opinions of other students and to create a synthesis from their own thoughts and those of others.

The Artful Thinking program can basically be evaluated in the context of two basic components of students' thinking dispositions and thinking routines. Both of these components are directly related to the program's goal of teaching thinking (Tishman & Palmer, 2007). Teaching thinking means that the teacher not only provides knowledge in the learning environment, but also encourages students to use their thinking skills and educates them as thinking individuals (Perkins & Ritchhart, 2004; Güzel Yüce, 2012). It is necessary to have intellectual skills and characteristics in order to think with high quality. Artful Thinking is one of the important factors for the intellectual development of the students. Thus, the students learn to experience art and to appreciate it at the same time.

The Artful Thinking program focuses on developing students' dispositions to reasoning, exploring viewpoints, finding complexity, comparing & connecting, questioning & investigating, observing & describing (Tishman & Palmer, 2007). These six dispositions can be explained briefly as follows:

Reasoning is one of the most important dimensions of critical thinking. The Turkish word for "reasoning" is "muhakeme" has the same root as "mahkeme" which means "court of justice". It means making an argument and making an impartial decision based on the available evidence. It is a high-level thinking action done by elaborating and making sense of an event, problem or situation around "Why" and "How" questions within the framework of logic (Erdem, 2011).

Exploring viewpoints, as one of the principles of the constructivist approach, which is an educational philosophy, briefly expresses being sensitive to the mental state of others. These mental states can include beliefs, desires, intentions and perceptions (Surtees et al., 2012). Johnson (1975) defines perspective as "the ability to understand how a certain situation appears to someone else and how that person reacts to the situation cognitively and emotionally" (Aslan, 2017). It helps students see and explore multiple perspectives. It helps them understand that different people can have different types of connections to the same thing and that these different connections affect what people see and think (Artful Thinking, 2023).

Finding complexity is a product of complex thinking. Complex thinking is a high-level type of thinking that relies on both rationality and creativity. The complex way of thinking, which allows revealing more than one dimension and layer in uncertain and ambiguous situations, has a multilogical and dialogic structure to produce multiple solutions (Pacheco, 2020).

Comparing & connecting is the evaluation of the similarity and contrast effect of more than one thing or idea. Including contradictions can be used in this dimension of Artful

Thinking to improve students' thinking skills. Thus, students can express their thoughts from a wider perspective by making connections about different works of art. It encourages metaphorical thinking, which is at the center of creative thinking. Metaphors spark our imaginations to make comparisons between different things, leading to a deeper and richer understanding (Artful Thinking, 2023).

Questioning & investigating is an approach that develops students' ability to ask questions and find the answers they seek. With this method, it is ensured that the student examines the issue in detail and strives to find a solution. Students actively participate in the process by asking questions, making research and observations, and taking responsibility (Davis, 2005). It helps students develop their own ideas and interpretations based on what they see, and arouses curiosity by encouraging them to wonder and ask questions (Artful Thinking, 2023).

Observing & describing is an approach that encourages students to look carefully at details. "What do you see?" and "What do you think of what you see?" helps students distinguish between observations and comments. It challenges them to develop detailed, nuanced and creative verbal explanations. It also encourages them to distinguish between observations and interpretations by asking them to keep their opinions - comments - about the work of art. This strengthens students' ability to reason carefully because it gives them practice in making long-term observations before making judgments (Artful Thinking, 2023).

Upon examining the educational methods employed since the time of Socrates to the present, it is evident that the promotion of critical thinking holds a significant position. Education has always placed a strong emphasis on teaching students how to think critically, rather than dictating what to think, throughout the course of history. The general response to the inquiry "How should one approach thinking?" can be identified as "critical thinking". This study focuses on the examination of "Artful Thinking" as a new method of critical thinking. Artful Thinking is more than teaching students thinking skills. Because Artful Thinking, which adopts a dispositional approach, allows students to transfer their thinking skills to various contexts. Thus, it is ensured that students acquire intellectual behaviors and acquire the ability to think deeply about works of art. After the Artful Thinking program, the student's thinking ability develops and the motivation to use this ability regularly occurs (Tishman & Palmer, 2007).

### **Importance of the Research**

There is a need for an enriched education program in schools on critical thinking, which is considered one of the basic skills of the twenty-first century (Bağceci & Şenel, 2019). An important aspect in developing critical thinking skills is the creation of a classroom environment that encourages critical thinking among students who experience the interaction between teachers and students (Borich, 2004). Adding engaging activities to the curriculum can help students achieve the desired results while also making critical thinking

instruction fun and dynamic. Conducting a special study on art is an effective opportunity to both develop critical thinking and broaden students' perspectives on art. The body of research supports the idea that critical thinking skills developed by art students are enhanced by the reflective thinking and aesthetic inquiry that occurs when they discuss artwork (Lampert, 2006). Critiquing and interpreting works of art in the classroom encourages students to thoughtfully consider multiple perspectives on art content (Geahigan, 1997). This study on artistic thinking is important in terms of developing students' views on art, providing them with the ability to interpret works of art, and enabling them to use critical thinking effectively.

### *Purpose of the Research*

The purpose of this study is to conduct action research using the Artful Thinking program to investigate how sixth grade students' perceptions of art and the development of critical thinking abilities are affected. It is expected that students will improve their critical thinking skills, which is one of the main objectives of the Ministry of National Education (MoNE). It is expected that the data to be obtained as a result of this study will contribute to the shaping of K12 education programs.

### *Sub-questions*

In accordance with the study's objectives, the investigation was designed to address four key inquiries, utilizing perspectives and insights gathered from participating students, the teacher, and the researcher. Thus emphasis is placed on the purpose of the study and the specific methodological approach employed to gather information, thereby sharpening the statement's focus:

1. What opinions exist among the students who took part in the program on Artful Thinking?
2. Does this program affect students' high-order and multidimensional thinking?
3. Does this program affect students' thinking development, elaboration and oral expression skills?
4. How does this program affect the teachers that are involved? formatting ensures the readability and professional appearance of your work, aiding in effective communication of your research findings.

## **METHOD**

This study was carried out with qualitative research methods. A key feature of qualitative research is to explore the depth of one or more conditions. In this study, Action Research, one of the patterns of qualitative research, was preferred as a model. Action research; it is also known as participatory research, collaborative inquiry, emancipatory research, action learning, contextual action research (O'Brien, 2001). This model refers to a

controlled research process conducted by the researcher and/or teacher with the aim of identifying and modifying future practices. This research is carried out within the scope of issues related to education (Ferrance, 2000). Carson, Connors, Smits, and Ripley's (1989) action research exhibits several key characteristics and methodological resemblances, as documented by Aydın (2005). Firstly, this approach is firmly grounded in the principle of cooperation, emphasizing the importance of collaborative efforts in conducting research. Secondly, it is characterized by a systematic learning process, underlining the structured and organized nature of the research endeavor. Thirdly, it demands an open-minded approach from researchers, encouraging receptivity to new ideas and perspectives. Furthermore, it serves as a method for the development and implementation of innovative practices. Lastly, it commonly involves small groups working together in a collaborative fashion, fostering synergy and collective problem-solving. These elements collectively define the fundamental traits of Carson, Connors, Smits, and Ripley's action research methodology. Action Research is a widely used model especially in the field of education in recent years. This model combines research and implementation. The researcher's being close to the data, knowing the process closely and being a data collection tool at the same time are the characteristics of this model. The frequently preferred data collection tools in action research are observation, interview and document analysis (Yıldırım & Şimşek, 2013).

In this study, the reasons for preferring action research are as follows: addressing the inadequacies observed in both students' critical thinking and art-related perceptions, facilitating the active participation of the researcher in the study and observing the implemented education on-site, providing an opportunity for collaboration with the practitioner teacher, being an iterative process based on improvement and development, the ability to directly observe the process due to it being a field research, easy adaptability to the educational program, and its effectiveness as a method for problem-solving.

### *Study Group*

This study was conducted in the 6th grade of a private middle school (middle schools are from 5th to 8th grades in Turkey) in Gaziantep, one of the country's largest cities in southeastern Turkey, during the 2022-2023 academic year. Of the 23 students in the class, 9 girls and 14 boys, 6 were immigrants. This study was formed by a homogeneous sample, which is one of the purposive sampling methods. Although it is a private school, the students generally come from middle class families. It can be said that the study group is homogeneous sampling because they are children from families that are similar in socio-cultural and socio-economic aspects. A small and homogeneous study group is preferred in the homogeneous sampling method, which is the opposite of maximum diversity sampling (Yıldırım & Şimşek, 2013). Due to ethical rules, the first letter of the students' names and surnames were used instead of student names in the article.

### *Implementation Process*

The study's implementation process followed a systematic sequence of steps. Initially, a comprehensive eight-week study plan was meticulously prepared. Subsequently, a careful selection was made, choosing 22 paintings out of a pool of 30 for integration into the Artful Thinking program. In order to effectively convey the program's essence to the participating teacher, an informative text was created. To further encourage critical thinking among the students during the program, provocative questions were created. To ensure the program's successful execution, a two-hour training session was conducted for the practicing teacher. Simultaneously, students were informed about the upcoming artistic exploration. Before the formal program launch, students were handed a semi-structured interview form with three questions aimed at gauging their initial perspectives on art. The core of the study comprised an intensive eight-week program, consisting of three lessons each week. In these sessions, students engaged in discussions about various paintings, spending ten to fifteen minutes contemplating each piece, which was presented on a smartboard. The teacher actively prompted students with inquiries to encourage profound thoughts and reflections. In the eighth week, a unique experiential component was introduced, involving a field trip to the Gaziantep Zeugma Mosaic Museum, renowned as the world's largest mosaic museum. Here, students had the opportunity to express their insights on mosaic artworks with a history spanning two millennia through written reflections. Throughout the implementation, the researcher diligently observed the proceedings. Following the program's conclusion in the ninth week, students were again presented with a semi-structured interview form, this time focusing on their post-implementation views on art. Additionally, face-to-face group interviews with students were conducted to gain a deeper understanding of their experiences and perspectives. Finally, the teacher was invited to share their opinions on the program through a semi-structured interview form, providing valuable insights into its effectiveness and impact. This systematic approach ensured a comprehensive and rigorous execution of the study.

### *Sample Questions*

Sample questions that will trigger students to think deeply in the process of examining works of art are given below. The basic critical thinking skills identified by the American Philosophical Association, including interpretation, analysis, evaluation, inference, and explanation, were used to identify the critical thinking skills of art students. Questions for students to develop responses such as understanding, inferring, identifying and distinguishing arguments, evaluating alternatives, thinking analytically, questioning evidence, and creating stories were developed with the participating teacher. Any of these questions can be posed to the class by the teacher, and also students also invited to ask these questions freely.

- What do you think about this painting? What are the things that make you think this way?

- How does this painting make you feel? What are the things that make you feel this way?
- What is happening in this painting? Why?
- In what different ways can you look at this work? How does it look from a different perspective?
- What can you say for sure about this painting? What are the things that make you think this way?
- Is there anything you can discover in this painting? What would you like to explore in this work?
- Is there a detail or a secret in this painting that you think no one has seen?
- What does this work look like? What are the things that make you think this way?
- What might this work be about? Why do you think that?
- Do you think there is a chaos in this painting? Is it a visible chaos, or is there a chaos you can't see but feel in the background of the painting? Why do you think that way?
- Why do you think the event you saw in this painting happened? What could be the antecedent events? What are the things that make you think that way?
- What could have happened after the event in this painting? What could be the successor events? What are the things that make you think that way?
- Can you develop interesting questions about this work? (Can you ask questions that none of your friends can think of? Who can ask the most questions?)
- If you wanted to give a name to this painting, what would you name it? Why would you choose such a name?
- What does this painting remind you of from real life? How does this thing you remember make you feel?
- What else does this painting remind you of? What are the similarities and differences between these two situations?
- If you were the owner of this painting, what would you do with it? Why is that?
- Is there anything in this painting which annoys you? Why is that?
- Is there anything in this painting which makes you feel happy? Why is that?
- How does color affect the mood or message of the artwork?
- Are there any unique or unusual techniques that stand out to you?
- How might different people interpret this artwork differently?
- Are there any symbols or metaphors in the artwork? What might they represent?
- Can you identify any artistic styles or movements that this artwork may be associated with?
- What do you think are the strengths and weaknesses of this artwork?
- What did the artist who made this painting think of while making this work?
- What if this painting had a sound? Why is that?
- What would this work of art be like if it had a taste? Why



### *Works of Art*

The researcher initially curated a collection of 30 paintings for inclusion in the Artful Thinking program. Subsequently, a collaborative evaluation took place, involving a visual arts teacher, resulting in the decision to utilize 22 of these artworks within the project's framework. Additionally, during a museum trip, students were granted the opportunity to select two mosaic images of their preference, bringing the total number of artworks used in the project to 24.

The selection of paintings was guided by a set of specific criteria. These criteria included considerations such as the composition of the artworks, the utilization of colors, the degree of emotional involvement they evoked, their originality, the diversity in settings (both in terms of time and place), and the representation of various artistic styles. These factors collectively informed the thoughtful selection of artworks that would best facilitate the objectives and experiences of the Artful Thinking program.

### *Data Collection Tools and Data Analysis*

In this study, data was collected using a quadratic data collection approach. In this way, the accuracy, reliability, comprehensiveness, depth, and generalizability of the study were ensured and attempts were made to reduce misleading factors. The data collection tools are:

- i. Pre-implementation and Post-implementation interview form for students (which is like pretest and posttest in quantitative research)
- ii. Face-to-face group interview with students
- iii. Interview form for the participant teacher
- iv. Researcher's observations

Explanations on data collection tools are given below:

**Pre-Implementation and Post-Implementation Interview Form for Students:** In order to determine the students' attitudes toward art, a pre-implementation form was given to the students prior to enrollment. These students participated in the Artful Thinking Program for eight weeks. At the end of the eight weeks, the post-implementation form was given to the students who participated in the Artful Thinking program to determine the extent to which their views on art had changed. Then, by comparing the pre-implementation data with the post-implementation data, an attempt was made to determine whether or not the students' views of art had improved. In preparing the questions on the interview forms, the Project Zero (PZ) community's interview questions were used and it was decided to make some minor changes to the application method and content. In this study instead of PZ's "I used to think..." task a Pre-implementation interview was used and instead of PZ's "Now, I think about art" task a Post-implementation interview form was used. These are the changes in terms of implementation. According to the changes made in the questions' content, the following three questions were asked to the students:

1. What do you think about art in general?
2. How does it make you feel when you see a work of art?
3. What does a good painting make you think?

Although the Artful Thinking program is a study on thinking dispositions, second question in the student interview form was included in order to evaluate the emotional state caused by a work of art.

Face-To-Face Group Interview With Students: In addition, face-to-face group interviews were held with the students after the program. In this interview, the students were asked, "What are your views on the development and enrichment of this program?"

Interview form for the Teacher: The interview form was given to the teacher at the end of the program, unlike the students in terms of application. The questions in the teacher interview form are given below:

1. Do you think Artful Thinking has caused a significant change in your students' views on art?
2. Has Artful Thinking caused a significant change in your views on art?
3. What are the advantages and disadvantages of the Artful Thinking project?
4. What are your views on the enrichment and dissemination of the Artful Thinking project?
5. Do you think the arts have a significant relationship with the curriculum? What are your views before and after the project?
6. Do you think that the Artful Thinking program has an impact on your students' high-order thinking skills?

Observation of the Researcher: A total of four observations were made by the researcher, once in the first and fifth weeks and twice in the eighth week. In order to carry out the observation process systematically, a critical thinking observation form was created by the researcher. In this form, students' affective state, self-expression, interpretation, analysis, evaluation, inference, explanation and self-regulation skills were addressed.

### *Ethical considerations*

Ethical Review Board: Scientific Research and Publication Ethics Committee of Gaziantep University

Date of Ethics Review Decision: 05.10.2023

Ethics Assessment Document Issue Number: 395155

### *Validity and Reliability*

Before collecting data, a Turkish teacher and a visual arts teacher checked whether the questions were purposeful and understandable. A pilot study was also carried out with five

students from an alternative sixth grade class. No changes were made to the questions after the pilot study. With this study, the content and qualification validity of the semi-structured interview forms was ensured. It was decided to give 15 minutes to answer the student interview forms. Triangulation was done for the reliability of the data.

### *Data Analysis*

A computer program was used to analyze the student interview data. Students' responses to the interview forms were coded by the researcher using free coding. The codes were then reorganized by two researchers. In addition to the numerical tables, the statements of the students are also given as quotations. The data obtained from the face-to-face group interviews with the students are given as quotations. In addition, the teacher's views and the researcher's observations are also included.

## RESULTS

Before starting the program, 23 students who participated in the Artful Thinking program were given an interview form consisting of three questions as a Pre-implementation. Students were given 15 minutes to fill out the interview forms. During the implementation process a total of 24 paintings were examined by the students for eight weeks. At the end of eight weeks, the students were given a Post-implementation interview form with the same three questions. The answers given by the students were evaluated in two dimensions as "positive" and "negative" categories. Numerical data were obtained by coding the answers of the students under these categories.

### *Interview Forms for Students*

The first question of the interview form is "What do you think about art in general?" The answers given by the students to the question were analyzed. The categories and codes obtained are given in the Table 1 below.

**Table 1.**

Artful Thinking Student Interview Form Question 1

Categories	Codes	Pre-implementation	Post-implementation
Positive Attitudes towards Art	It's peaceful	4	3
	It's nice	4	6
	I find it interesting	0	1
	It's astonishing	1	0
	It's good	4	3
	It's eternal	1	1
	It's mysterious	1	0
	It makes you feel happy	1	2
	It's fun	2	2

	My mind is cleared	0	1
	I love art	0	2
	It develops different perspectives	0	4
	It develops imagination	0	3
	It's instructive	0	1
	It's meaningful	0	1
	We can express ourselves	2	0
	It's provoking	3	10
	It's required	0	1
Importance and Value of Art	It's useful	1	0
	It's very important	2	3
	It's proud	1	0
	It's like the jugular vein of man	1	0
	We should deal with art	1	0
	I respect art	1	0
	Art is everything	0	1
	It's indispensable	0	1
	It's valuable	1	0
	It is life	0	1
	It develops people	0	2
	Total	31	49
Mixed or Negative Attitudes towards Art	It's boring	1	0
	I don't understand art	1	0
	Not suitable for me	1	0
	It's nothing	2	0
	Difficult to understand	1	0
Neutral	I am not interested in art	1	0
	I don't mind it	1	0
	Total	8	0

In the analysis of the answers given to the first question, four categories emerged as "Positive Attitudes towards Art, Importance and Value of Art, Mixed or Negative Attitudes towards Art, Neutral". In the first two categories, students created a total of 31 positive codes in the Pre-implementation, and a total of 49 positive codes in the Post-implementation. According to this data, it can be said that there is a fifty percent increase in the positive opinions of the students about art in general after the implementation. Some of the positive opinions of the students in the Post-implementation are as follows:

"I used to just look at the paintings and pass by, but now I think about the invisible aspects of the painting, its smell and its sound." (HH)

"I became more interested in art than I used to be." (UD)

"Art is indispensable in our lives. Art develops people mentally and physically." (ED)

"After this project, I started to think that art is as infinite as the universe." (IBS)

“I can now look at works of art from different perspectives.” (UAD)

“Every time I look at a painting, I feel my mind cleared.” (MTY)

“Art is a very beautiful thing, it is peaceful, it gives people different perspectives.” (EDH)

“Art is necessary in every corner of the human being. Thanks to this project, we got to know a lot of artworks and it was very useful.” (ZY)

“I try to see what no one else sees in a work of art. The mosaics in the museum were very impressive.” (FH)

“I think my imagination developed thanks to this project.” (TO)

“In the past, works of art meant nothing to me, thanks to this project, when I look at a painting, I try to understand its story, I learnt how important art is.” (MI)

“I think about art in much more detail now.” (BU)

For the first question, eight negative codes were formed in the Pre-implementation, but it is seen that there were no negative opinions in the Post-implementation.

The second question of the interview form was asked to determine the affective situations of the students. The question is “How does it make you feel when you see a work of art?” The answers given by the students to the question were analyzed. The categories and codes obtained are given in the Table 2 below.

Table 2.  
Artful Thinking Student Interview Form Question 2

Categories	Codes	Pre-implementation	Post-implementation
Curiosity	It arouses curiosity	4	2
	It's different	1	0
	It's interesting	2	0
	Sense of discovery	0	1
Surprise	It's surprising	3	4
	It's staggering	1	0
Impressive	It's impressive	1	0
	It's exciting	4	3
	It feels perfect	1	0
	Artwork draws me in	1	2
	It makes me dreaming	0	1
Happiness	It gives happiness	10	15
	It feels good	3	5
	It's fun	2	0
	Butterflies fly inside me	0	1
Empathy	I try to feel artist's feelings	1	0

	I feel empathy	2	5
	I want to make it too	0	1
Emotional	It makes you feel love	1	0
	It makes you emotional	1	3
	I'm filled with perseverance	0	1
	It warms me up	0	1
Peacefulness	It is peaceful	2	7
	It's proud	1	4
Pride	A sense of effort and achievement	1	2
	I have to make it too	0	1
Respect	I respect	0	1
	It's worthy of appreciation	1	0
	Total	43	60
Negative	Nothing	1	1
	Total	1	1

In the analysis of the answers given to the second question, ten categories emerged, the first nine of them as “positive” categories and the last one is as “negative” category. The students created a total of 43 positive codes in the Pre-implementation, and a total of 60 positive codes in the Post-implementation. According to this data, it can be said that there is a thirty seven percent increase in the positive affective expressions of the students about art in general after the implementation. However, only one negative code was formed in the Pre-implementation and Post-implementation. Some of the positive affective expressions of the students in the Post-implementation are as follows:

“I feel restless, so I am very happy.” (BU)

“I feel happy and proud when I see a good work of art. I don't know why I'm proud, but it makes me feel proud.” (MI)

“Some of the pictures are so beautiful that I imagine I am in the picture.” (TO)

“It removes all my unhappiness and makes me happy.” (YNB)

“I feel all the emotions described in the work.” (FH)

“I am proud on behalf of the artist. I feel that I can make similar works, and I feel a sense of it.” (ZY)

“I feel at peace.” (EDH)

“I get happy and sometimes I get emotional.” (MTY)

“I contemplate.” (UAD)

“I used to be careless, but now I feel good and at peace.” (IBS)

“A work of art warms my heart, I feel things like surprise, curiosity and happiness.” (ED)

"I feel the mood in the piece." (UD)

"If the work is peaceful, butterflies fly inside me." (GA)

"It's such a comforting feeling that it's like my soul flies away and then comes back."  
(HH)

The third question of the interview form is "What does a good work of art make you think?" The answers given by the students to the question were analyzed. The category and codes obtained are given in the Table 3 below.

**Table 3.**

Artful Thinking Student Interview Form Question 3

Categories	Codes	Pre-implementation	Post-implementation
Curiosity and Wonder	I am curious about the artwork	8	7
	I wonder how the artist created the work	2	2
	I try to understand the artist's thoughts	2	6
	I try to understand the artist's feelings	4	3
	I question myself why I can't do it too	2	0
	I would like to do similar or better	6	1
	I imagine what I don't see in the work of art	0	1
	I look for the secret / mystery in the work	1	2
	I think about the confusion in the artwork	0	2
	I think about the story of the artwork	0	2
	I think when the work was done	0	2
	I think about the smell in the work	0	1
	I think about the voices in the work	0	1
Admiration and Respect for Art and Artists	I admire the artist	3	3
	I think art is important	1	0
	Art makes people happy	1	1
	Good art requires effort	1	4
	I consider the details	1	3
	Empathy to the artist	6	4
	Old artworks are better	0	1
	I feel astonished	1	1

Engagement with Artwork	Every art is beautiful	1	0
	I feel going into the work of art	1	0
	I try to understand the work of art	2	3
	Art is soothing	0	1
	Art provides different perspectives	0	1
	I think we need to be careful no matter what we do	1	0
Total		44	52

In the analysis of the answers given to the third question, three positive categories emerged which are "Curiosity and Wonder, Admiration and Respect for Art and Artists, Engagement with Artwork". Students created a total of 44 codes in the Pre-implementation, and a total of 52 codes in the Post-implementation. According to this data, it can be said that there is a thirteen percent increase in the positive views of the students about art in general after the implementation. No negative code was formed in the Pre-implementation and Post-implementation. Some of the positive views of the students in the Post-implementation are as follows:

"I wonder how the artist makes his work, what kind of brushes and paints he uses."  
(HH)

"I wonder who the artist is doing his work for." (GA)

"I think about what is tried to be meant in the work, under what conditions the artist made this work, this kind of things." (UD)

"Is there a secret hidden in the work, I think about it." (ED)

"I think works of art used to be much better quality, technology makes art artificial."  
(NA)

"I feel all the emotions in the work inside me." (HEK)

"I'm curious about the artist's feelings." (EDH)

"A good work of art requires a lot of effort and working." (ZY)

"I get the feeling that I can do it too and I try to do it." (FH)

"I wonder about the story of the painting, I wonder what happened before and what might happen after." (YN)

"When I see a good work of art, it should make me say 'Wow!', I need to understand the artist's work." (MI)

"I think about things that I didn't think about before, like the smell, the taste, the story." (BU)

Face-to-Face Group Interview with Students



Some of the opinions received from the students in the face-to-face group interview are given below:

“Through this project, we learnt to respect different views, I think it was very enjoyable.” (UD)

“It developed our imagination.” (LS)

“Such activities should be done not only in Turkish lessons but also in other lessons.” (BU)

“Each picture was like a puzzle, it was very exciting.” (TO)

“It would have been nicer to visit galleries and see the works there rather than seeing them from the smart board.” (IBS)

“A similar work can be done not only with painting, but also with music.” (NA)

“It would be more enjoyable if students asked questions about the work.” (ED)

“The paintings to be used in the project should not clearly express what they want to convey so that we can make different interpretations.” (UA)

“Some paintings should not be shown as a whole so we can imagine the rest of the painting and compare it with the whole work later.” (MTY)

### *Teacher Interview*

The opinions of the Turkish Language Teacher, who applied the Artful Thinking program in her class for eight weeks, are given below:

“By using critical thinking, we were able to create visual representations and improve intersensory communication. The program produced excellent results. During the studies carried out with critical thinking, the transfer of social, cultural and literary characteristics of civilizations into art boosted my interest and deepened my inquiry. The students were quite effective in producing rich content ideas in the subsequent weeks, despite their initial difficulties in the first two or three weeks. Because Artful Thinking relies on interpretation based on description, it was quite simple for the students to infer concepts from the images. Nonetheless, our students found it challenging to decipher the image's central idea and/or attempt to convey the feeling that was meant to be conveyed. We started working on helping our students with weak descriptive power, read books and increase their vocabulary. With this study, we clearly discovered that our students know a limited number of adjectives. After that, we provided the students with a list of the most often used adjectives in Turkish, both positive and negative, along with their definitions. Our homework for the pupils was to use every adjective in a sentence. We observed that when our pupils' vocabulary grew, so did their ability to understand images on a much wider level. In this sense, I can also state that the kids' proficiency in Turkish has increased. Thanks to the Artful Thinking project,

students developed not only critical but also creative and analytical thinking skills. I can easily say that their interest in art has increased.”

“I didn't believe there was a link between the curriculum and art until this program. Following our study on Artful Thinking, I came to the conclusion that art permeates every part of our existence and finds a way into our feelings and thoughts. I believe that a variety of fields can benefit from Artful Thinking. Activities involving Artful Thinking are simple to incorporate, particularly in spoken instruction. For example, I think that permanent learning can be achieved by using artworks related to the subjects learned in such as Social Studies, History and English courses. Thanks to this study, just as students' Turkish vocabulary and self-expression skills increased, students' foreign language skills in English lessons can also be increased if it is used in the lessons.”

“I believe that a study such to this one may be conducted to improve students' writing abilities. I schedule time in my classes for my pupils to journal on their emotions and ideas after viewing an artwork.”

“Consequently, I can say with certainty that following the initial weeks of the Artful Thinking program, students were able to develop very different ideas from what they had when we first started the program. In recent weeks, students have started speaking much more freely about their ideas. It is also a significant development that students come up with creative ideas. So much so that their interpretations of some of the masterpieces are so strange that I have to declare that I am impressed by their imagination.”

### *Researcher's Observation*

The researcher made two observations in the eighth week and one each in the first and fifth weeks. At the end of the study, the researcher made a general evaluation of the notes he took on the observation forms he prepared within the framework of the sub-dimensions of critical thinking. In each observation, the researcher also recorded the students' other thinking that was not included in the observation form. For instance, although it was not included in the form, the performance of the students in the dimensions of creative thinking was also considered noteworthy.

General evaluation of the observations made in the first week's implementation:

“It was noted that pupils were open to responding to inquiries regarding the paintings that were displayed to them. In order to get the pupils' attention, the teacher poses questions. She visits each workstation in an attempt to speak with as many students as she can. It might be argued that the students' ideas were lacking, despite their willingness to engage in the Artful Thinking implementation when it was something they had never done before. When reading and evaluating the artwork, it was noted that they took a highly realistic approach. It can be argued that female students contribute more successfully and that students don't generally come up with original ideas; instead, they tend to communicate identical views. They haven't grown to see things from numerous angles.

They talk on the paintings' visual aspects and are limited to their perceptions. When it comes to tasks like guessing and inferring, they don't work well enough. They expressed how much they had loved the activity in the conversation that followed its implementation. However, based on the first week experience, we can state that this practice can be tough for the teacher since students are too linked to the truth and are fearful of being ridiculed by expressing other things."

General evaluation of the observations made in the fifth week's implementation:

"It is clear from the fifth week's observation that the pupils have made significant progress since the first week. Students pay close attention to one another's opinions, comprehend conflicting viewpoints, and are encouraged to form more nuanced opinions by one another. Regarding their level of active participation in the activity, male and female students do not differ in any way. Male students are just as ready to voice their ideas as female students, despite what was noticed during the first week of classes. When compared to the fifth week of observation, the first week's observations revealed that the students are more capable of developing significantly different ideas, using their imagination more flexibly, and demonstrating their critical and creative thinking skills regarding the pictures. They also show that the students tend to think more logically and approach the paintings in a realistic manner when they analyze them. It's astonishing how many conclusions children draw regarding their ability to sense the invisible. By examining from an alternative viewpoint within the painting, and through the eyes of the painter, they offer various explanations for the paintings. In the interview with the students at the end of the course, it is seen that the students appreciate participating in Artful Thinking exercises."

General evaluation of the observations made in the fifth week's implementation and museum visit:

"Students' approaches to art have been found to significantly improve as a result of participating in Artful Thinking program. Pupils come up with a lot more concepts on the image. By expanding on one another's ideas or forming competing viewpoints, they are able to originate longer stories. They are passionate about creating the unseen stories behind the painting. For example, they can turn what is happening outside the window into a rich story, based on the sunlight reflected inside and the trees whose leaves are visible. They make logical inferences using the evidence. In my opinion, they have made significant progress in clarifying and analyzing the issues they deduced. They favor classical art over contemporary ones. They can use complex arguments regarding difficult-to-understand imagery to produce more vivid observations and assessments. They had a great day seeing the mosaic museum. They looked closely at the mosaic museum's approximately two millennia-old pieces. They worked by composing analyses and interpretations of the two pieces they selected. They said that even though they had visited the museum multiple times previously, this was the first time they had examined the mosaics in such depth."

“We can state that students' critical thinking abilities have generally increased as a consequence of our eight-week Artful Thinking curriculum implementation. Particularly in the areas of critical thinking and creating alternative, evidence-based perspectives, the kids performed exceptionally well. They have been noted to be highly effective in advancing one another's viewpoints and refuting one another's ideas. According to their evaluations, they required the teacher's support in constructing arguments in order to effectively communicate their opinions. In this particular setting, it can be argued that students tend to generate more innovative ideas than critical viewpoints. We can say that students also progress in creative domains such as fluency, flexibility, elaboration, narrative, looking from various angles, and abstract thinking when developing their views, even if this is not the primary focus of our study. Students expressed their happiness at having participated in the program at its conclusion.

## DISCUSSION

The results obtained from this research indicate that almost all students enjoyed the Artful Thinking program and expressed satisfaction with their participation in the program. Upon examining the student interview forms in general, it is observed that in the pre-implementation, students generated a total of 118 positive codes related to art, whereas in the post-implementation, they generated 161 codes. Allocating equal time for the completion of the interview forms in both applications eliminated potential manipulation due to time variability. It is believed that students generated a 36% higher number of positive codes in the post-implementation, suggesting that Artful Thinking is highly effective in further enhancing students' positive views on art. Alter, Unsworth, Paterson, Reid, and Rauch (2008) indicate that participating teachers tend to focus on developing students' artistic skills and knowledge rather than working towards improving their critical and creative thinking skills through Artful Thinking in art classes.

In the pre-implementation, students created a total of 9 negative codes, while the number of negative codes after the Artful Thinking program was found to be only 1. After the Artful Thinking activities, it is seen that the negative perceptions of the students about art disappeared to a great extent. Only one student stated that the Artful Thinking program did not change his views on art. Artful Thinking aims to foster an appreciation for the emotional and aesthetic aspects of art. By engaging with artworks, students may develop empathy, connect emotionally with different perspectives, and understand the power of visual expression (Tishman & Palmer, 2007).

The main purpose of this program is to determine whether students will acquire critical thinking skills through the Artful Thinking program and what their opinions about this program are. The observations made and the answers given by the students in the activities prove that the students have improved considerably in terms of higher order thinking. Ülger (2015) states in his study that art education improves students' critical thinking skills. İşler (2005) emphasizes that art criticism practices play an active role in the

development of critical and interpretive thinking skills. Çağış ve Eraslan-Taşpınar (2022) also found that the critical thinking skills of the students who were taught with the pedagogical art criticism method increased compared to the students who were taught with the traditional method. Daşdemir (2021) enabled students to make evaluations from different perspectives with visual art. This situation contributed to students' perspectives on the subject in artistic expressions, enriching their knowledge and gaining depth in their critical questioning. Dumitru (2019) analyzed 35 academic studies and reached the following conclusion: "The findings in the analyzed articles unexpectedly reveal not how critical thinking makes us better artists, but how the arts and humanities make us better critical thinkers." The findings of other researchers are in line with the findings of our research. Accordingly, we can state that Artful Thinking (or thinking with art) activities positively affect students' critical thinking skills.

The perspectives based on the observations of teachers and researchers suggest an increase in students' awareness of art. Pavlou (2013) emphasizes the role of discussing art in helping children begin to understand it. Art education is deemed crucial for the intellectual development of children (Jeffrey 2005; Cremin et al. 2006). Furthermore, through this project, students have had the opportunity to develop advanced thinking skills in an enjoyable manner. In terms of creative thinking, students have exhibited progress in dimensions such as fluency, flexibility, elaboration, imagination, storytelling, and abstract thinking. Art education is significant for the realization of creative learning (Jeffrey 2005; Cremin et al. 2006). Despite Pavlou's (2013) assertion that creativity does not develop through art viewing, our study has revealed that students indeed cultivate creative thoughts. However, it should be noted that this does not necessarily imply the ability of students to produce creative artworks.

It has been observed that students have shown improvement in the ways they express their thoughts, listen to each other's ideas, and even elaborate them. A doctoral thesis by Daşdemir (2021), which investigated the impact of visual arts education on critical thinking, also yielded similar results. According to Daşdemir, the activities have facilitated students in expressing themselves comfortably. Respect has been shown to students' comments, and constructive feedback has been provided to them. Consequently, students have demonstrated mutual respect for each other's viewpoints.

### LIMITATIONS AND RECOMONDATIONS

The results of our findings strongly support Artful Thinking as a powerful factor and highlight its role in fostering the holistic development of the new generation through art. In summary, this study has positively impacted students' perceptions of art. The promotion of student-centered education, particularly in expressing viewpoints and engaging in discussions, aspects of the constructivist learning environment, has been evident. Students learned to develop new and diverse perspectives through discussions, creating elaborated narratives inspired by each other's thoughts. They acquired skills in respecting different

opinions, receiving and delivering criticism. Through the activities conducted in Turkish language classes, students expanded their vocabulary and gained proficiency in expressing themselves. Moreover, they demonstrated advancements in critical skills such as interpretation, explanation, inference, and creative thinking by utilizing their imaginations. Within the scope of recommendations, it can be suggested to conduct a similar study examining the impact of Artful Thinking on creative thinking and/or high-order thinking. Additionally, implementing activities supported by both oral and written practices in English classes can be recommended to enhance students' language skills.

## CONCLUSION

Is the efficacy of art derived from other academic benefits such as mathematics or literacy, or should the focus be on the intrinsic value of art, independent of other intellectual performance domains? (Tishman and Palmer, 2007). This study does not aim to investigate the impact of the Artful Thinking approach on students' academic development or curriculum achievements. In accordance with the understanding that "art is for art's sake," the researcher decided to conduct this study to comprehend the influence of students' perceptions of art, thinking skills related to art, and higher-order thinking skills. The primary objective of this study is to delve into the impact of Artful Thinking on students' critical thinking skills in a more detailed manner and to establish a solid foundation in this regard. In the midst of a paradigm shift away from the constant pursuit of academic benchmarks, this research shed light on the subtle yet impactful influence of Artful Thinking on students' perceptions of art and opened a gateway to enhancing profound artistic thinking skills. The study was conducted from a perspective that focuses on multidimensional thinking skills, unveiling an intrinsic world of value within art itself. The findings advocate for the recognition of art education as a catalyst contributing to the development of cognitive abilities surpassing the confines of traditional academic achievements.

## REFERENCES

- Alter, F., Unsworth, L., Paterson, D., Reid, J. A., & Rauch, K. (2008). *Artful Thinking: Critical and creative thinking in primary and secondary visual arts education*. Doctoral dissertation. University of New England, Australia.  
<https://rune.une.edu.au/web/handle/1959.11/1518>
- Artful Thinking. (2023). [http://pzartfulthinking.org/?page\\_id=2](http://pzartfulthinking.org/?page_id=2) (retrieved on 10.02.2024)
- Aslan, D. (2017). *Okul öncesi dönem çocuklarının bakış açısı alma becerilerine empati eğitim programının etkisinin incelenmesi*. [Investigation of Empathy Training Program's Effect on Preschoolers' Perspective Taking Skills], Doctoral dissertation, Ankara Üniversitesi.  
<https://dspace.ankara.edu.tr/xmlui/handle/20.500.12575/37664>

- Aydın, İ. (2005). *Öğretimde denetim: durum saptama, değerlendirme ve geliştirme*. [Inspection in teaching: situation determination, evaluation and development.] Ankara: PegemA Yayıncılık. <https://doi.org/10.14527/9786052417058>
- Bağceci, B. & Şenel, M. (2019). Development of pupils' critical thinking skills through journal writing. (12), 129-139. *International Forum for Education*. <https://doi.org/10.15804/IFforE2019.08>
- Borich, G. D. (2004). *Effective Teaching Methods*, 5th Edition, New Jersey, Merrill
- Cremin, T., Burnard, P. and Craft, A. (2006). Pedagogy and possibility thinking in the early years', *Thinking Skills and Creativity*, 1(2), 108–19 <https://doi.org/10.1016/j.tsc.2006.07.001>
- Çağış, M. B., & Eraslan Taşpınar, Ş. (2023). Pedagojik sanat eleştirisinin öğrencilerin eleştirel düşünme becerilerine etkisi. [The Effect of Pedagogical Art Criticism on Students' Critical Thinking Skills] *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi* (59), 103-119. <https://doi.org/10.9779/pauefd.1176433>
- Daşdemir, A. (2021). *Görsel sanatlar eğitiminde görsel kültürün bilsem öğrencilerinin eleştirel düşünme becerilerine katkısı*. [The contribution of visual culture to the critical thinking skills of Bilsem students in visual arts education], Doctoral dissertation, Anadolu Üniversitesi. <https://earsiv.anadolu.edu.tr/xmlui/handle/11421/26787>
- Davis, S. A. (2005). *Inquiry-Based Learning Templates for Creating Online Educational Paths*. Master of Science, Texas, A&M University.
- Dumitru, D. (2019). *Arts and humanities as a source of critical thinking development*. *Proceedings of INTCESS*, 925-936.
- Erdem, E. (2011). *İlköğretim 7. Sınıf öğrencilerinin matematiksel ve olasılıksal muhakeme becerilerinin incelenmesi*. [An investigation of the seventh-grade students mathematical and probabilistic reasoning skills], Master Thesis, Adıyaman Üniversitesi.
- Ferrance, E. (2000). *Themes in education: Action research*. Brown University: Educational Alliance, 34(1), 1-33.
- Freire, P., & Macedo, D. (1998). *Okuyazarlık*. [Literacy] (Translation: Serap Ayhan). Ankara: İmge Kitapevi.
- Geahigan, G. (1997). Art criticism: From theory to practice. In Wolff, T. and G. Geahigan (Eds.), *Art criticism and education* (125-278). Urbana: University of Illinois Press
- Güzel Yüce, S. (2012). *Bir ilköğretim okulunda düşünme kültürünün geliştirilmesine yönelik eylem araştırması*. [Action research on developing a culture of thinking in a primary school], Doctoral dissertation, Çukurova Üniversitesi. [https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=At5yFy5A23\\_SITg3rGODLw&no=l-RanfwKPXATeIuK7Sj1tA](https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=At5yFy5A23_SITg3rGODLw&no=l-RanfwKPXATeIuK7Sj1tA)

- İşler, A. Ş. (2005). İlköğretimin ilk yıllarındaki sanat eleştirisi uygulamaları ve bu uygulamaların eleştirel düşünme gelişimi açısından önemi. [Art Criticism Applications At The First Years Of Elementary Education And The Importance of These For The Development Of Critical Thinking] *Uludağ Üniversitesi Eğitim Fakültesi Dergisi*, 18(1), 135-149.
- Jeffrey, B. (2005). *Final Report of the Creative Learning and Student Perspectives Research Project (CLASP)*. Bruselas: Comisión Europea
- Johnson, D. W. (1975). Cooperativeness and social perspective taking. *Journal of Personality and Social Psychology*, 31(2), 241-244. <https://doi.org/10.1037/h0076285>
- Kırıçoğlu, O. (2002). *Sanatta eğitim*. [Education in Art] (2. Edition). Ankara: PegemA Yayıncılık.
- Knight, L. (2010). Why a child needs a critical eye, and why the art classroom is central in developing it. *International Journal of Art & Design Education*, 29(3), 236-243. <https://doi.org/10.1111/j.1476-8070.2010.01655.x>
- Lampert, N. (2006). Critical thinking dispositions as an outcome of art education. *Studies in Art Education*, 47(3), 215-228. <https://doi.org/10.1080/00393541.2006.11650083>
- Lewis, A., & Smith, D. (1993). Defining higher order thinking. *Theory into Practice*, 32(3), 131-137. <https://doi.org/10.1080/00405849309543588>
- MoNE. (2023). <https://ttkb.meb.gov.tr/> (retrieved on 10.02.2024)
- O'Brien, R. (2001). An overview of the methodological approach of action research. In R. Richardson (Ed.), *Theory and practice of action research*. Joao Pessoa, Brazil.
- Pacheco, C. S., & Herrera, C. I. (2021). A conceptual proposal and operational definitions of the cognitive processes of complex thinking. *Thinking skills and creativity*, 39, 100794. <https://doi.org/10.1111/jade.12261>
- Perkins, D., Ritchhart, R. (2004). When is good thinking. In D. Y. Dai & R. J. Sternberg (Ed), *Motivation, Emotion and Cognition*. 351-384. New Jersey: LEA
- Sternberg, R. J. (1986). *Critical thinking: Its nature, measurement, and improvement*. National Institute of Education. Retrieved from <http://eric.ed.gov/PDFS/ED272882.pdf>
- Surtees, A. D. R., Butterfill, S.A. & Apperly, I.A. (2012). Direct and indirect measures of level-2 perspective-taking in children and adults. *British Journal of Developmental Psychology*, 30(1), 75-86. <https://doi.org/10.1111/j.2044-835X.2011.02063.x>
- Tishman, S. & Palmer, P. (2007). Works of art are good things to think about. *Centre pompidou, evaluating the impact of arts and cultural education, conference proceedings, France*, 89-101.
- Ülger, K. (2015). Sanat eğitiminin düşünme becerileri üzerine etkisi. *Milli Eğitim Dergisi* [The Effect of Art Education on Thinking Skills], 45(206), 135-147.
- Yıldırım, A. & Şimşek. H. (2013). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri*. [Qualitative research methods in the social sciences] Seçkin Yayıncılık. Ankara.



## Data Availability Declaration

No Primary Data Utilized:

This study is conceptual in nature and does not rely upon primary data collection. As such, there are no datasets directly associated with the presented findings. The discussions and conclusions drawn are based on an extensive review of existing literature and analytical insights put forth by the authors.

## Author Contributions

The authors of this research, Mustafa Şenel and Bülent Döş, were responsible for the conceptualization, methodology formulation, data collection, analysis, and interpretation. Furthermore, Mustafa Şenel and Bülent Döş took charge of drafting the initial manuscript, revising it critically for vital intellectual content, and finalizing it for publication. Both authors have read and approved the final manuscript and take full accountability for the accuracy and integrity of the work presented.

### *Author(s)' statements on ethics and conflict of interest*

**Ethics statement:** We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

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