

The Role of Art Education in Promoting a Culture of Conservation and Restoration of Paintings among Sixth Grade Students in Jordan

Ahmad Abd El-Kareem Bani Issa , Faculty of Fine Arts, Yarmouk University.

Haider Suhail Najim , Mechanical Engineering Department, College of Engineering, University of Basrah, Basrah.

Abstract

This study aims to investigate the impact of art education on promoting a culture of conservation and restoration of paintings among sixth-grade students in Jordan. The study focuses on a field-based learning unit that included both theoretical and practical components. The unit was designed with a narrative and applied approach suited to the characteristics of this age group, encouraging both emotional and cognitive engagement with issues of conservation and restoration. The research used a qualitative interpretive methodology, analyzing students' responses, classroom interactions, and visual examinations of pre-painted works using artistic tools and practical observation. The findings revealed that art education effectively shapes students' understanding of art as a cultural identity element, emphasizing social responsibility and behavioral change rather than solely aesthetic appreciation. Additionally, the study highlighted improvements in students' critical thinking and visual analysis skills, heightened emotional awareness of the importance of artwork, and the acquisition of basic technical restoration skills. The collaborative nature of the activities also fostered social skills, proactivity, and collaboration among students. Overall, the research emphasized that art education, grounded in real-world experiences, has the potential to cultivate cultural citizenship and appreciation of visual heritage. It recommended integrating concepts of conservation and restoration into art education curricula at the primary level.

Keywords Art education, painting conservation, artwork restoration, experiential learning, aesthetic awareness, visual heritage.

دور التربية الفنية في تعزيز ثقافة صيانة وترميم اللوحات الفنية لدى طلاب الصف السادس في الأردن

احمد عبد الكريم بني عيسى، كلية الفنون الجميلة، جامعة اليرموك.

حيدر سهيل نجم، قسم الهندسة الميكانيكية، كلية الهندسة، جامعة البصرة.

الملخص

هدفت هذه الدراسة إلى تحليل مدى إسهام التربية الفنية في تعزيز ثقافة حفظ وترميم اللوحات الفنية لدى طلاب الصف السادس في الأردن، من خلال وحدة تعليمية ميدانية تجمع بين الجانبين النظري والعملي، وقد تم تصميم الوحدة بأسلوب قصصي وتطبيقي متكامل يراعي خصائص الفئة العمرية، ويعزز الانخراط الوجداني والمعرفي في موضوعات الصيانة والترميم الفني، وقد اعتمدت الدراسة على منهج نوعي تفسيري، وتحليل مضمون إجابات الطالبات وملاحظات التفاعل الصفّي، إلى جانب استخدام أدوات فنية وفحص بصري عملي للوحات مرسومة سلفاً. حيث كشفت النتائج عن فاعلية التربية الفنية في إحداث تحولات عميقة في إدراك الطلاب لدور الفن كعنصر من عناصر الهوية الثقافية، وكمجال مسؤولية اجتماعية، لا مجرد تعبير جمالي فقط، كما أظهرت النتائج تطوراً في مهارات التفكير النقدي والتحليل البصري، وارتفاعاً في مستوى الوعي الوجداني بقيمة اللوحة الفنية، بالإضافة إلى تمكين الطلبة من مهارات تقنية أولية في الترميم، وقد برز أيضاً أثر العمل الجماعي على تنمية المهارات الاجتماعية، وتعزيز روح المبادرة والتعاون. خلصت الدراسة إلى أن التعليم الفني، حين يبنى على أسس تطبيقية وسياقات واقعية، يمكن أن يؤدي دوراً محورياً في حماية التراث البصري وتعزيز قيم المواطنة الثقافية، ويوصى بتضمين مفاهيم الحفظ والترميم ضمن مناهج التربية الفنية في المراحل الأساسية.

Received:
27/4/2025

Acceptance:
8/7/2025

Corresponding Author:
Ahmad.abd@yu.edu.jo

Cited by:
Jordan J. Arts, 18(3)
(2025) 405-422

Doi:
<https://doi.org/10.47016/18.1.8>

© 2025 - جميع الحقوق محفوظة للمجلة الأردنية للفنون

الكلمات المفتاحية: التربية الفنية، حفظ اللوحات، ترميم الأعمال الفنية، التعلم القائم على التجربة، الوعي الجمالي، التراث البصري.

Introduction

This study aims to enhance students' cultural awareness and reinforce their connection to the visual heritage of their homeland. In the midst of rapid technological advancement and cultural transformation, it has become essential to guide educational curricula toward integrating the concepts of safeguarding artistic works, particularly paintings, as visual records of collective identity. Despite global efforts in this field, further activation is still required within the Arab context, especially in primary schools.

Plastic arts represent one of the most powerful manifestations of human civilization, as they embody aesthetic values and cultural meanings that reflect the identity and heritage of nations. Therefore, training students in the preservation and restoration of these artistic works necessitates not only technical skill but also a deep understanding of symbolism and historical significance.

Cultural and artistic heritage is a foundational element of national identity in Jordan and globally. It reflects collective memory and strengthens a sense of belonging. With the growing number of museums and art exhibitions dedicated to conserving artworks, art education plays a crucial role in raising awareness among students—particularly at the primary and secondary levels—about how to protect this precious legacy. Teaching restoration and preservation, especially to sixth-grade students and beyond, meets the demand for both creative and technical skills while fostering cultural and social responsibility.

Jordan faces several challenges related to its visual heritage, including climate change, neglect, and limited knowledge of restoration practices. Therefore, integrating this topic into art education is necessary. Recent studies have shown that hands-on restoration activities encourage critical and creative thinking and introduce students to the relationship between past and present, as well as to visual symbols and identity.

This study responds to the challenge of increasing awareness around art restoration by designing a field-based educational unit for sixth-grade female students within the visual arts curriculum. The cognitive and conceptual maturity characteristic of this educational stage makes it suitable for learning specialized concepts. Given the significance of this subject, the Jordanian Ministry of Education should incorporate "heritage preservation" into the national curriculum for sixth grade, in line with national educational priorities.

Art is no longer merely a technical skill but a means of reflection and cultural expression that enhances students' awareness of their identity and cultural diversity. Integrating art into the curriculum inspires students to engage with traditional artistic practices and connect with their cultural roots. Paintings, for example, not only visually depict historical stories, beliefs, and values, but also foster a collective awareness of the value and sustainability of cultural heritage, contemporary studies indicate that arts education conveys cultural heritage and instills in students an awareness of its importance in preservation and restoration. Engaging students in such educational opportunities nurtures a sense of ownership and belonging and encourages them to reflect on their roles as active citizens in preserving a shared identity.

This study is distinguished by its focus on designing and implementing a field-based educational unit for sixth-grade female students in Jordan. The unit integrates theory and practical application within art education classes, promoting a culture of preservation and restoration of paintings from an early educational stage.

Problem Statement

The rapid technological development, along with global cultural shifts, has led societies to experience a diminishing awareness about protecting artistic and cultural heritage, particularly among younger society members. The majority of sixth-grade students do not possess the knowledge or skills needed for painting conservation and

restoration. This existing knowledge deficit may result in artwork abandonment and a reduced appreciation of national historical significance. this research seeks to answer the following question is: Does art education demonstrate sufficient strength to foster a culture that supports painting restoration among sixth-grade students?

The importance of this issue stands out because it addresses two critical needs: protecting cultural and artistic heritage and developing school curricula with essential art conservation and restoration content. By resolving this issue, students will develop their artistic understanding and capabilities to defend their cultural inheritance.

Study Objectives

1. Determine the level of interest sixth-grade students show towards painting preservation initiatives.
2. Introduce new educational strategies that foster this culture.
3. Study the effects of art education on students' aesthetic perception and their development as responsible artists.

Significance of the Study

1. The study helps students recognize artistic heritage as an essential element of their cultural identity so they develop stronger ties to national and global cultural traditions.
2. Students who learn restoration methods develop both artistic and practical abilities that prove useful for future educational pursuits and artistic careers.
3. The use of an educational story and realistic simulation to engage students emotionally and cognitively.
4. Reliance on classroom observation, qualitative analysis, and short interviews with students.
5. Photographic documentation of the practical process inside the classroom, reinforcing the hands-on component.

Theoretical Framework

Previous Studies

Few studies can be found in this regard in Jordan and the Arab world. Some studies worth mentioning include:

An excerpt on integrating heritage in school curricula from Arabiat (2014). The article sought to expose this process, focusing on how heritage is integrated within educational materials across the Jordanian context. It showed the importance of heritage in Arab countries, focused on Jordanian royal initiatives that aim to integrate cultural heritage into education, and discussed educational ways to integrate heritage—by presenting what is accepted and by critiquing or correcting what is not accepted. The study encompassed types of heritage (manuscripts, artifacts, artistic products) and the roles of institutions and society in preserving it, particularly intangible cultural heritage.

In her study "Art Education Between Creativity and Recycling of Used Materials" (2023), Al-Sharkasi focused on the use of recyclable materials in art education and their role in promoting awareness among students on preserving the environment and artistic heritage. The study concluded that practical and immersive art education breeds understanding and responsibility toward heritage. However, the study had a different working set in mind, more of recycling it had little attention to specialist practices into the realm of ampere paintings able.

In Kuwait, Al-Salem (2016) referenced the importance of art education through making local crafts for elementary school students in revitalizing local traditions. It recognized significant components of local heritage that could be enhanced via art education, the pedagogical importance of these components, and the barriers teachers face in promoting heritage awareness.

Muriel Verbeeck & Marie-Hélène Breuil (2014) focused on teaching conservation and restoration in art schools. They stressed that the balance between art production and preservation would require integration of technical knowledge, creativity, and scientific

analysis. Their study also shed light on the barriers educators face when working to promote restoration as an artistic and cultural practice.

In Canada, Robert Potocnik (2020) adopted teachers' perceptions and applications of heritage preservation in visual arts classes. Findings identified a dissonance with heritage education from immediate conceptualization to broader application in practice, with numerous contributors, from social tensions to resource limitations and the absence of heritage curricula.

Recent international studies have highlighted the pivotal role of art education in promoting cultural heritage awareness and sustainable conservation practices. According to UNESCO's 2022 Global Report on Cultural Education, experiential art programs that include hands-on conservation techniques significantly enhance students' sense of identity and collective memory. These findings align with European initiatives,

heritage Council of Ireland (2021). such as the "Heritage in Schools" program in Ireland, which integrates conservation skills into primary education by involving students in local heritage restoration projects.

In Canada, the Art Gallery of Ontario (AGO) has implemented school-based modules focusing on the preservation of Indigenous artworks, allowing students to understand the ethical and technical dimensions of cultural conservation. These international models provide a valuable reference point for structuring educational interventions that are both culturally responsive and pedagogically effective. Incorporating similar methodologies in the Arab world can foster a stronger link between students and their artistic heritage while reinforcing civic responsibility, Art Gallery of Ontario (AGO). (2020).

Definition of Conservation and Restoration of Paintings

Beware of a term that may be more prominent in the city but less so when it comes to the science of conserving and restoring paintings, these processes involve cleaning, repairing damage from time or the environment, and restoring artwork to its original or close to original condition without compromising its artistic integrity. Conservation requires proper environmental conditions such as temperature, humidity, and lighting to prevent damage. This is a primary preventive measure to avoid more aggressive treatments in the future (Caple, 2000).

Restoration, on the other hand, involves fixing physical damage to an artwork or historical object. It includes treating cracks, cleaning surfaces, removing old varnish layers, and restoring original colors or elements using carefully studied scientific techniques. Restoration aims to return the work to its original or near-original condition while preserving its historical and artistic integrity (Stoner&Rushfield,2013). Preservation of artistic or cultural heritage aims to stabilize damage and surface deterioration. The restorer seeks to preserve as much of the original work as possible, intervening minimally and choosing materials and methods with great care (Bani Issa, 2019, p. 95).

Challenges in Art Education in Jordan

Jordan is also facing an onslaught of creative problem-solving in their arts education curriculum. It has become quite popular to integrate the arts across the curriculum in such a way that students get the opportunity to engage in their art forms within the context of their local culture. This not only helps improve artistic skills but also stimulates students to contemplate their cultural identity (Petre, 2023).

One prominent aspect of the new curriculum is restoration techniques. Introduced to the fundamental principles of conserving and restoring artworks — a vital part of safeguarding Jordan's artistic heritage — sixth-grade students learn how to care for the pieces. Students will become familiar with identifying different types of damage, implementing appropriate restoration techniques, and understanding the ethical considerations that may apply through hands-on projects. That hands-on awareness

instills students with a respect for the significance of art and accountability for their own cultural history.

Assessment strategies use a variety of models to measure students' understanding and skills. Teachers also use a variety of tools to evaluate students beyond traditional exams, including project-based assessments, peer review, and self-assessment. In this way, teachers are able to give more descriptive feedback, assisting students in fine-tuning their approach and developing a culture of reflection within the classroom.

Since students become acquainted with restoration techniques, their engagement with the local art community also increases. Interacting with local artists and the stories and knowledge they share deepens students' understanding of the social nature of art. Students not only develop their technical skills but also create a sense of ownership and responsibility for the preservation and restoration of the artworks that mark their cultural context, relating classroom learning with professional practice. Through this engagement, students create awareness of the significance of advocating for local artists, and their artistic legacy will live on for generations to come!

Nonetheless, many barriers prevent sixth-grade students in Jordan from experiencing true engagement with their cultural heritage, particularly in terms of conservation and restoration. One of the biggest problems is the scarcity of resources available to schools and students. The vast majority of institutions cannot afford the quantity of quality paints, brushes, and materials needed for art projects, let alone specialized restoration tools. "This makes it so that students are not getting the hands-on experience as they should and learning the important skills of restoration".

Additionally, the existing curriculum lacks exposure to restoration practices. Students might learn about art history and techniques, but few are allowed to inquire into specific restoration skills. None of these gaps are insignificant students are unlikely to truly understand civilization and the protection of artifacts of a culture, thus allowing their own culture to become inaccessible to them. Students lack practical classes or workshops by restoration experts that help them understand the significance of art preservation and the processes associated with it.

These challenges are further complicated by social perceptions of art. Art is frequently considered a luxury next to important subjects. This can alter the public's view of art programs and initiatives, diminishing interest in seeing this kind of pursuit seriously, making it harder for students to see the worth and value within arts education. Students are less likely to pursue their artistic skills or careers in art restoration when communities do not make the arts a priority.

Overcoming these issues is crucial to cultivating a culture of conservation and restoration in students. Increasing access to resources and incorporating restoration practices into the curriculum allows educators to foster a deeper appreciation for artistic heritage. Understanding the skills and knowledge students need will motivate them to play a role in preserving their culture and lead to an investigation of successful restoration techniques that will guide their future artistic work.

Improving Restoration Methods

Innovatively teaching restoration techniques is important to be taught in art education and can be integrated into sixth-grade curricula in Jordan. Using basic restoration methods introduces students to fundamental knowledge about caring for and preserving artworks. Surface preparation and care, assessed as surface treatments and knowledge of art material usage. Furthermore, such foundational knowledge exposes students to the series of efforts behind arts conservation, as well as instills within them the awareness of the role that preserving their cultural heritage plays (Salagean-Mohora et al., 2023).

Practical workshops provide an excellent opportunity for students to engage in hands-on restoration techniques. In these sessions, local artists and restoration experts guide individuals through the restoration process. This level of hands-on involvement allows

students to test classroom theory against on-the-ground challenges and witness restoration practices and outcomes in action. This might include learning how to use turpentine to clean canvas surfaces or how to apply varnish to protect a painting theoretically and practically useful things in the future (Salagean-Mohora et al., 2023).

Future field trips to restoration sites can also add more depth to students' knowledge of restoration techniques. When students visit museums or galleries where conservation is taking place, they can see how their studies are applied in practice. The combination of professional observation and cultural heritage preservation brings students closer to the reality of the job. For numerous students, these excursions provide an opportunity to interact with professionals, encouraging the emergence of unexpectedly creative connections to their own artistic practices and reflections surrounding the position of technology in contemporary conservation approaches (Salagean-Mohora et al, 2023).

As their restoration skills develop and they come to appreciate how technology plays a role in this, the new generation of students will be primed to appreciate the enhancement of traditional practices via digital tools. This immediately opens up larger conversations on the role of technology in art education and the creation and preservation of works of art.

Analytical Framework: To What Extent Can Art Education Contribute to Promoting a Culture of Conservation and Restoration of Paintings Among Sixth Grade Students?

Research Methodology

This study adopts a qualitative ethnographic approach, allowing the researcher to act both as an observer and a facilitator. This methodology aligns with the need to understand the dynamic, real-world interactions within the classroom. The ethnographic strategy was applied by directly observing the implementation of the instructional unit across eight sessions and documenting students' interactions, emotional responses, and verbal contributions.

The use of open and axial coding techniques was employed during the qualitative data analysis stage. Students' written reflections, project reports, and transcripts of class discussions were coded to extract themes related to aesthetic awareness, technical skills, and emotional responses. Open coding allowed the researcher to identify categories such as "respect for heritage" and "emotional engagement with art," while axial coding helped in establishing relationships between these categories and students' behaviors during restoration activities

The instructional unit titled "Preserve Our Paintings" was implemented over 8 sessions (two per week) and covered both theoretical instruction and hands-on activities. The unit started with storytelling (the story of "Noor") to emotionally engage students, followed by analysis of damaged paintings, use of microscopes and UV light, and step-by-step restoration using wax and pigments. Students worked in small teams to carry out restoration and presented their outcomes to the class.



Figure1. during the researcher's explanation to the students in the classroom

Study Population and Sample

The study involved 24 sixth-grade female students from Model School – Yarmouk University during the second semester of the 2024/2025 academic year. the sample was limited to sixth-grade female students due to accessibility and administrative approval.

This stage was selected because students at this level possess sufficient cognitive and motor skills to grasp abstract concepts and apply restoration techniques. Additionally, the class offered a consistent environment for the longitudinal application of the unit.

although the primary sample consisted of 24 students, the appearance of higher numbers in certain tables is due to allowing students to select more than one response per question. This was clarified during questionnaire design to capture multiple dimensions of student perceptions.

Educational Environment

The research took place in an art classroom equipped with art supplies and visual aids. the curriculum focused on "Conservation and Restoration of Artworks"and spanned eightclass sessions covering cognitive, skill development, and emotional learning.

Research Tools

1. Structured Classroom Observation Forms.
2. Audio-recorded short interviews (transcribed and coded).
3. Student project booklets and written reflections.
4. Photographic documentation of each session.

The following table shows the educational unit plan.

Table 1. Instructional Unit Plan

Lesson number	Session Title	Activities	Materials Needed	Assessment Tool
1	Introduction & Storytelling	Read and discuss the story "Noor's Discovery"; connect to themes of preservation	Story projector	Observation checklist
2	Pre-survey& Visual Analysis	Direct questions Examine sample paintings; identify signs of deterioration	Sample artworks, small paper paintings	direct observation
3	Conversation with a restoration expert	The researcher shares his restoration experiences with the students.	researcher speaker setup	Student questions & summary notes
4	Science Behind Restoration	Use UV/magnifiers to inspect artwork condition,	UV light, USB light microscope	Exit ticket
5	Hands-On Restoration I	Demonstrate cleaning damaged paintings safely	Soft brushes, cotton swabs, cleaning agents	Teacher observation
6	Hands-On Restoration II	Practice filling cracks and retouching faded areas	Wax, pigments, small spatulas	Group rubric
7	Presentation of completed work,	Group work: restore selected artworks and document process	artwork created by students	Project evaluation Evaluating students'
8	final paper questionnaire and take students' notes	Filling out a paper questionnaire oral discussion	pens and paper	answers feedback forms& discussion

Validity and Reliability

To ensure the validity and reliability of the findings, the researcher utilized photographic documentation and multiple data collection methods (observation, content analysis, and interviews). The findings were corroborated by the course supervisor and other art teachers through triangulation.

First: Linking the Qualitative Analysis with the Implementation of the Field Educational Unit

1. Integration of Theory and Practic: From Concept to Experience

Through the design of the educational unit on "Conservation and Restoration of Artworks", we demonstrated a formulated cognitive and skill-based dimensions of an applied learning environment that stimulated not only conceptual but also active possibilities. Essential content across weighty subjects such as conservation, restoration, and deterioration was conveyed through a compelling narrative in early sessions, telling the story of "Noor," a student who researched restoration techniques and restored a neglected painting. This storytelling approach aligned with one of Vygotsky's (1978) central ideas, which is that "Meaning is constructed through social experience and symbolic mediation.

The narrative served as more than a hook; it activated the students psychologically and cognitively within the unit. "The old paintings, that is history; we need to preserve them, like antiques," one student in his group remarked. In later sessions, activities like "assessing damage in pre-painted pieces" helped translate the broader understanding into real-world tasks. Students were encouraged to visually inspect, use tools, and make suggestions, increasing their intrinsic motivation and giving each individual the feeling of being a "beginning conservator" rather than a passive consumer of data.

This progression aligns with David Kolb's (1984) theory of experiential learning: "Real learning takes place when a learner has an experience, reflects on it, and puts their learning into practice." This was evident in the students' reactions; one student mentioned, "I was frightened when I started to pick up the brush, but then I felt like I could create art like a professional." The journey from fear to confidence reflects cognitive and skill development through repeated exposure and practice, reaffirming Bruner and Piaget's models of accumulative knowledge where comprehension is built not just through teaching but through guided, active engagement.

Furthermore, using paintings that had already been damaged by the teacher-researcher helped students gain real and relatable experiences (more so than hypothetical examples) in their learning process. This practice aligns with principles of contextual learning (UNESCO, 2021) that emphasize learner-centered pedagogy.

Analytical Summary

- A. The cognitive domain became easier to understand through storytelling and questioning, as well as visual associations.
- B. The skills domain became active through hands-on activities that occurred both individually and collaboratively.
- C. The unit produced an emotional learning experience that went beyond knowledge and skill development to create a deep sense of cultural responsibility in students.

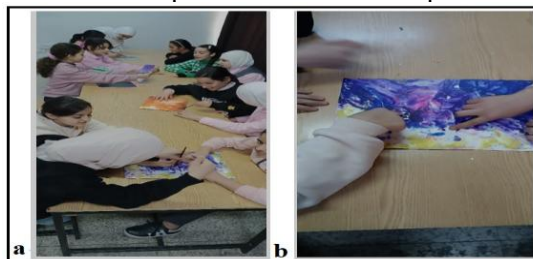


Figure 2. (a) Students are divided into groups, and here they apply the cleaning technique to damaged artwork., (b) Students searching for deterioration of the painting.

2. Enhancing Emotional Awareness and Cultural Responsibility

the "Conservation and Restoration of Artworks" unit achieved its most significant outcome by eliciting emotional and behavioral changes, in addition to cognitive and skill-based learning. This learning outcome aligns with the highest level in Bloom's Taxonomy, which emphasizes the affective domain.

Through illustrated stories, group activities, and a documentary video on historical painting restoration, students developed a deep connection between art and identity. They began to see the painting as more than just a visual artifact, understanding its significance in shared cultural memory. This shift in perspective was evident in the data presented in Table 2.

Table 2. Demonstrates the extent to which students demonstrate intellectual and emotional understanding of the concept of art conservation.

Meaning Extracted from Responses	Number of Students
Preserving artistic beauty for others to enjoy	14
Protecting history and the originality of the artwork	7
Preventing damage and ensuring the artwork's longevity	6
Conveying the message to future generations	2
Recognizing and respecting the artist's effort	1

Students demonstrated both intellectual comprehension of the concept and emotional involvement with it through their responses. According to John Dewey (1934), in his explanation of the "aesthetic experience," art cannot be understood only through intellectual understanding because it requires emotional and heart-based experience. The intensity of artistic engagement leads to a deeper understanding of personal cultural origins.

students frequently mentioned "preserving the original," "the painting is old," and "the artist worked hard on it" to show their internalized cultural responsibility as personal values. The students showed evidence of emotional education, which represents a fundamental objective of modern educational curricula.

During an activity, one student made the following observation: "The study of ancient cultures should be our priority because their paintings reveal how people thought and lived in the past." The student's observation demonstrates an anthropological-cultural viewpoint, which aligns with the unit's objective to connect art with identity and memory.

Theoretical Framework Connection

The multiple intelligences theory developed by Howard Gardner shows that visual-spatial and intrapersonal intelligence work together in art restoration environments because students need to perceive, understand, and experience the work. According to UNESCO (2021), heritage education aims to develop citizens who not only understand cultural heritage but also feel responsible for it and connected to it. The restoration unit provided an emotional educational experience that instilled cultural citizenship values in students, going beyond basic painting instruction.

Analytical Summary

- A. Students experienced emotional growth by expressing their pride and willingness to protect heritage through their work.
- B. Students developed social awareness as they desired to share their newfound knowledge with their families.
- C. Students exhibited cultural values through their appreciation for artistic work, respect for artistic effort, and understanding of art as a symbol of national identity.

3. Technical Application Deepening Understand

The restoration lessons took a qualitative turn as students began to understand paintings as visual objects requiring analysis through the implementation of technical tools and inspection devices.

During the second lesson (third session), students conducted tests on real paintings using various detection tools such as:

- A. Ultraviolet light device.
- B. Digital microscope connected to a computer.
- C. High-resolution optical lense Students responded with genuine astonishment and curiosity, with comments like:

"I had no idea such equipment exists to reveal cracks".

"The painting appears completely new when viewed through the microscope as though it were brought back to life".



Figure 3. shows the painting being examined under a light microscope USB.

A. Building Analytical Thinking

The students actively participated in visual reasoning combined with critical analysis during this period. The students needed to:

1. Determine the nature of the damage
2. Make connections between the origin and outcome of events such as paint peeling from moisture or light exposure
3. Suggest actual restoration approaches

This development demonstrates metacognition (Flavell, 1979) since learners both execute actions and provide explanations about their purpose, which remains crucial for developing analytical thinking in young students.

B. Developing Fine Technical Skills

Students learned about precise applications which included:

1. The painting's surface received cleaning through soft brush applications.
2. The process included using backing patches with adhesive paper to fix cracks.
3. The restoration process combined beeswax with heat tools and acrylic paints to fix the crack.

The exercises served as technical practice while requiring students to combine:

1. Fine motor skills
2. The ability to distinguish visual elements of color and texture
3. The need to make decisions when working with sensitive materials (e.g., "Should I adjust the color or change the material).

One student expressed this thought:

I hesitated to paint the crack because I needed to be exact instead of painting randomly.

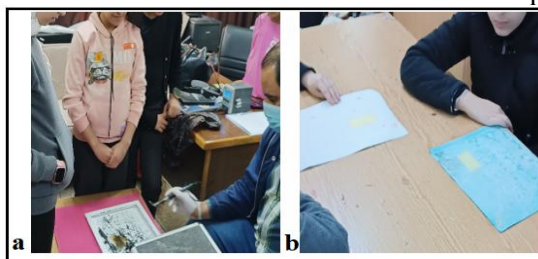


Figure 4. (a) While treating a crack in the board in front of the students using beeswax and an electric iron, (b) The students used paper tape to patch the crack in the painting

C. Experience as a Pathway to Professional Identity

The students participated in actual tool usage and workflow experiences that simulated the role of a "junior art conservator," thus introducing them to possible future careers and developing early vocational identity.

The method conforms to UNESCO's (2021) recommendation to implement early vocational education in primary stages through applied arts to develop future generations who grasp technical skills for cultural heritage protection.

Supporting Evidence from Table 3: When students answered the question "What did you learn from the art restoration unit?" they provided technical, specific answers.

Table 3. Students' answers to the final questionnaire

Technical Response	Number of Students
How to conserve and restore paintings	18
How to clean a painting	2
Using beeswax in restoration	1
How to inspect a painting	1

Analytical Summary

- A. Students' mastery of tools and devices supported analytical and structured thinking.
- B. Art education shifted from passive instruction to critical experimentation.
- C. The use of visual tools improved professional observation skills.

4. Art restoration vocational identity markers began to emerge in some students, Collaborative Work and Developing Social Skills through Art

The implementation of collaborative learning methods in the "Conservation and Restoration of Artworks" unit helped students develop their social abilities effectively. Most practical activities required students to work together in groups when they identified damage, cleaned paintings, created restoration plans, or delivered class reports after each lesson.

A. Cooperative Learning in the Artistic Context

Johnson & Johnson (1999) explained that classroom cooperative learning techniques develop five important elements which include:

- Positive interdependence
- Individual accountability
- Supportive face-to-face interaction
- Collaborative skills
- Group processing

The essential elements that formed part of student learning became visible through their statements as well as the researcher's direct observations:

- "I helped my friend because she was afraid she might ruin the painting, so we worked together."
- "The painting received attention from three students who handled different responsibilities such as cleaning, inspection, and documentation."

The statements show that students displayed an unconscious grasp of group organization alongside role distribution and mutual support, which serves as a vital sign of social maturity in educational environments.

B. Artistic Interaction as a Means to Build Social Competence

The collaborative activities went further than simple task distribution. The activities led students to share joint expressions, negotiate solutions, and develop mutual respect for one another. A painting restoration discussion between group members produced conflicting opinions between color-based and adhesive paper fixes until they attempted both approaches for result comparison.

The process of interaction leads to the development of three essential skills:

- Active listening
- Constructive conflict resolution
- Flexibility and acceptance of others' opinions

This approach follows Vygotsky's theory about social learning first occurring between people before it moves to individual learning within the Zone of Proximal Development.

C. Art as a Social and Collective Medium

Art functions beyond personal creation because it enables people to construct connections and emotional bonds. The unit demonstrated how art enabled students to share their collective emotional response to heritage while achieving collective success during restoration projects.

The teacher's praise of our painting work made me feel our teamwork was worthwhile, especially when he said it was excellent. Group recognition leads to "social reinforcement," which enhances intrinsic motivation for group participation according to educational psychology. Supporting Data from Table 4: When students answered how they could use their learned skills in real life, they mentioned social situations among their responses.

Table 4. Students' answers about the benefits of restoration lessons in practical life

Response	Number of Students
Conserving artworks with family	3
Teamwork to decorate the classroom	2
Collaborating with friends on cleaning	1

The students demonstrated that they did not consider the experience solely personal, as they thought about ways to share it with others. This shows a collective awareness developed through enriched learning.

Analytical Summary

1. The artistic teamwork process enabled members to develop their group communication skills, planning abilities, and execution capabilities together.
2. The collaborative experience fostered values such as cooperation, respect, and mutual support. Students who shared their learning experiences developed positive relationships with each other, building confidence and feeling more at home in their group.

Second: Qualitative analysis of quantitative data extracted from female students

Two applied questionnaires were distributed at the end of the unit to collect quantitative data aimed at evaluating the extent of cognitive, emotional, and technical learning outcomes achievement. The research examined two aspects of student understanding: the fundamental concepts underlying conservation and restoration practices, and the practical applications of acquired knowledge in real-world situations.



Figure 4. While the students were answering the questionnaire.

Table 5: Understanding the Concept of Conservation and Restoration.

Conceptual Category	Number of Students
Aesthetic Preservation (Color/Shape/Beauty)	17
Historical and Cultural Preservation	12
Protection from Damage and Deterioration	9
Conveying Message and Identity to Future Generations	3
Respecting the Artist's Effort	1

Educational Interpretation:

The data demonstrate that multiple students have different interpretations of conservation and restoration concepts. The majority of students (17 students) focused on the visual aspects because younger students primarily experience the world through what they see. The responses that highlighted historical and cultural awareness (12 students) and the protective conservation function (9 students) showed students moving beyond superficial impressions towards a deeper symbolic comprehension. The students understood that artworks possess cultural, symbolic, and functional significance beyond their visual appeal.

Mohi (2002) declared, "The goal of conservation extends beyond material preservation because it safeguards collective memories." The ability of students to recognize artworks as messages for future generations is a crucial aspect of educational practice. The awareness of art's time-based and space-based nature aligns with UNESCO's cultural sustainability initiatives in art education. Table 6: Knowledge Transfer to Daily Life.

Table 6. Educational Interpretation

Type of Application	Number of Students
Conservation of Artworks at Home/Classroom	18
Technical Application (Tools/Materials/Methods)	4
Conservation of Personal Items (Toys/Notebooks)	6

The results show that students learned more than just basic concepts; they started applying their classroom knowledge in their everyday lives. Out of the 24 students, 18

demonstrated that they could use their conservation and restoration skills in artworks found at home or in their classrooms. The unit successfully achieved its goal by translating knowledge into practical applications. Among the students who used specific tools or materials for their work (4 students), they displayed advanced procedural and technical understanding. These students showed hands-on mastery by being able to differentiate between tools and methods. Students who restored toys and notebooks showcased their understanding of restoration by applying the concept to their personal belongings. These findings support Jack Mezirow's (1991) transformative learning theory, which states that the process of deep learning enables individuals to evaluate their regular thought patterns while adopting new behaviors that they can use in their everyday activities.

Visual Representation of Student Data:

The following figure presents a visual representation that combines both data sets to illustrate students' understanding and practical application of restoration concepts.

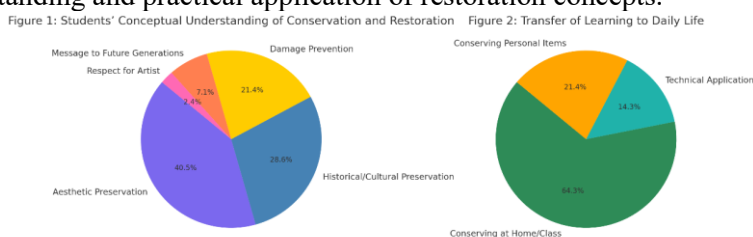


Figure 5. Students' Conceptual Understanding of Conservation and Restoration

The pie chart illustrates how students grasped the concept of restoration.

- According to the chart, 40.5% of students associated restoration with maintaining aesthetic qualities such as color, shape, and beauty.
- 28.6% of students viewed restoration as a means of cultural and historical preservation.
- 21.4% of students defined restoration as the protection against deterioration.
- 7.1% of students recognized restoration as a tool for transmitting messages about identity to future generations.
- 2.4% of students valued the artist's work as an integral part of the restoration process.

Interpretation

The majority of students initially considered restoration from a visual or aesthetic perspective. However, a significant percentage of students progressed to understand the deeper cultural and functional significance of restoration. This indicates a shift from basic intuition to symbolic comprehension in their understanding.

Figure 2: Transfer of Learning to Daily Life

- The pie chart depicts students' plans for applying restoration concepts in their daily lives.
- The data reveals that 64.3% of students intended to incorporate conservation practices in their homes and classrooms.
- Students demonstrated their knowledge by utilizing specific tools and techniques they had learned.
- Another group of students applied their restoration knowledge to refurbish personal items like toys and notebooks.

Interpretation

The data presented in the chart shows that students not only retained their knowledge of restoration concepts but also successfully applied them in real-world situations. This aligns with Ausubel's (1968) theory of meaningful learning and Mezirow's (1991) concept of transformative learning, as it demonstrates how knowledge leads to personal transformation and practical application.

Analytical Summary

1. The assessment results indicate that students progressed from a basic to an advanced understanding of art concepts.
2. Student responses often integrated "beauty - history - deterioration - generations - artist" as a cohesive conceptual framework that developed throughout the unit.
3. The application of learned knowledge in personal contexts reflects meaningful learning, as defined by Ausubel (1968).
4. Student responses that incorporate cultural values show that the unit successfully achieved its objective of fostering community-oriented emotional awareness through art.

Summary of Findings

This study finds evidence that when art education is structured and executed as a unification of theory and practice, it constitutes an instrument in creating a culture of "conserving and restoring paintings" that is integrated into the sixth-grade curriculum. The findings can be summarized in the following ways:

1. This section is meant to show what students studied from previous moments leading up to their learning about conservation and restoration, how well they understood the concepts, and how it inspired them.
2. Development of Emotional and Cultural Awareness: This resulted in a positive and significant increase in students' sense of belonging and responsibility towards cultural heritage. They shared their love for paintings as symbols of cultural identity.
3. Improved Critical and Analytical Thinking: Using restoration tools and inspection devices encouraged students to become sharp observers, making connections between causes and outcomes, leading to stronger action-based critical thinking.
4. Emergence of an Artistic Professional Identity: By engaging with restoration in practice, students were able to imagine themselves as custodians of heritage, signaling the emergence of an artistic professional identity.
5. Teamwork that Promotes Social Skills: Working in teams naturally cultivates practices such as collaboration, respect, and shared responsibilities, resulting in positive relationships and engagement with their groups.
6. Applicable Learning to Real Life: Students pointed out that they could apply what they had learned at school beyond the classroom walls into their home and social dimensions, which we consider meaningful and contextualized learning, emphasizing the localization aspect of knowledge.

Results and Findings

Thematic analysis was conducted using Braun & Clarke's framework (2006), following six stages. the findings of the study were categorized into three core dimensions: cognitive understanding, emotional engagement, and practical application. These were analyzed based on student responses, observation notes, and qualitative coding.

1. Cognitive Understanding:

A majority of students demonstrated a shift from perceiving paintings merely as decorative objects to recognizing them as carriers of historical and cultural significance. This was evident in their references to "preserving the original", "respecting the artist's effort," and "sharing art with future generations."

2. Emotional and Cultural Awareness:

Students expressed a strong emotional connection to the restored artworks. Statements such as "this painting reminds me of my grandmother's house" and "we are fixing history" indicate a deep personal engagement. Emotional responses were triangulated using quotes, observation logs, and drawings students created reflecting their experience.

3. Technical Skill Development:

Students showed measurable improvement in their technical abilities. This included

the use of fine motor skills during restoration, accuracy in color matching, and care in handling damaged artworks. Comments like “I was afraid to touch the crack, but now I know how to fix it” reflect both skill acquisition and confidence development.

4. Quantitative Insights from Questionnaire Data:

The structured questionnaire revealed that:

- A. 70% of students associated restoration with beauty and aesthetics.
- B. 50% emphasized historical and cultural value.
- C. 25% connected restoration to emotional meaning and memory.

These overlapping insights validated the qualitative observations.

5. Social and Collaborative Growth:

Students learned to divide responsibilities, negotiate artistic choices, and reflect on their teamwork experiences. Observational data highlighted how students naturally developed leadership, support roles, and peer mentoring.

6. Link to Study Objectives:

All three stated objectives were addressed:

- A. Students expressed high interest in preservation efforts.
- B. The instructional strategies resulted in tangible skill and awareness gains.
- C. Students reported increased appreciation for art and their role as future contributors to heritage conservation

Teacher Reflection

As a researcher and art educator, my role in implementing the educational unit extended beyond mere observation to encompass guidance and emotional engagement with the students. One of the most striking aspects I noticed during the implementation was the students’ transformation—from initial hesitation and fear of handling damaged artwork to a state of enthusiastic involvement and self-initiated participation. This shift was evident not only in their practical outcomes but also in their verbal expressions and mutual encouragement within the groups.

I faced the pedagogical challenge of balancing structured guidance with opportunities for self-discovery. I found that posing open-ended questions and facilitating group discussions helped deepen understanding and foster a sense of collaboration among the students.

This implementation also highlighted the importance of integrating storytelling into lessons. The narrative of "Noor," for example, created an emotional connection that enabled the students to grasp the value of art preservation not only cognitively but also emotionally. This experience demonstrated that heritage-based art education requires the fusion of technical competencies with emotional and human dimensions to cultivate genuine cultural awareness.

Conclusion

This study affirms that experiential, heritage-driven art education can act as a transformative force in developing young students’ awareness of, and responsibility toward, cultural preservation. Through the implementation of a field-based instructional unit, students were not only introduced to technical restoration practices but also engaged emotionally with the artwork, expressed critical reflections, and demonstrated collaborative problem-solving.

The dual role of the teacher as both guide and cultural mediator proved essential in fostering a classroom culture of respect, inquiry, and active participation. The integration of storytelling, hands-on practice, and reflective writing contributed to a comprehensive learning experience.

These findings highlight the need for systemic reforms in curriculum and training approaches that support the embedding of heritage education into mainstream schooling. By doing so, schools can become vital spaces for nurturing civic-minded, culturally grounded future generations.

Recommendations

Based on the documented improvement in students' technical restoration skills, emotional engagement, and understanding of cultural heritage, the study proposes the following actionable recommendations:

1. Curriculum Integration: Embed conservation and restoration modules into primary-level art curricula, with a focus on hands-on, project-based learning.
2. Teacher Training: Develop specialized training programs for art educators on heritage-based pedagogy and basic restoration techniques to ensure competent facilitation of such units.
3. Resource Provision: Equip schools with simple conservation kits and visual aids (e.g., magnifiers, sample artworks) to enable practical application even with limited infrastructure.
4. Community Involvement: Encourage collaboration with local museums, artists, and cultural institutions to host school-based exhibitions and restoration workshops.
5. Policy Support: Advocate for national education policies that prioritize the preservation of cultural identity through interdisciplinary art education.
6. Documentation and Sharing: Create repositories of successful instructional units and case studies that can be shared among educators regionally and internationally.

Sources & References

1. Abu Zureik, M., & Kawamleh, A. (1990). *Panorama of Plastic Art in Jordan*. The Jordanian Ministry of Culture, Jordan.
2. Adeshina, A. E. (2024). The transformative role of digital resources in teaching and learning. *Open Journal of Educational Development*, 5(1). <https://doi.org/10.52417/ojed.v5i1.520>
3. Art Gallery of Ontario (AGO). (2020). *Indigenous Art Education Toolkit*. Toronto: AGO Education, <https://ago.ca/learn/ago-teacher-resources>
4. Ausubel, D. P. (1968). *Educational Psychology: A Cognitive View*. New York: Holt, Rinehart and Winston.
5. Bani Issa, A. (2019). *Study the extent of deterioration caused by the materials and methods used in the implementation of the ancient painting and methods of treatment and conservation application on the model selected* (Ph.D. thesis). Fayoum University, Egypt.
6. Bloom, B. S. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals*. New York: Longmans, Green.
7. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
8. Bruner, J. S. (1966). *Toward a Theory of Instruction*. Cambridge, MA: Harvard University Press.
9. Caple, C. (2000). *Conservation Skills: Judgement, Method and Decision Making*. Routledge, New York.
10. Chang, Y., & Sangiamvibool, A. (2024). Intangible cultural heritage Kangwei paintings: Literature review and outlook. *Journal of Ecohumanism*, 3(7). <https://doi.org/10.62754/joe.v3i7.4452>
11. Dahri, N. A., Al-rahmi, W., Almogren, A. S., Yahaya, N., Vighio, M. S., & Al-Matuok, Q. (2023). Mobile-based training and certification framework for teachers' professional development. *Sustainability*, 15(7), 5839. <https://doi.org/10.3390/su15075839>
12. DeAngelis, B. M., Sutton-Grier, A., Colden, A., Arkema, K., Baillie, C. J., Bennett, R. O.,... & Grabowski, J. H. (2020). Social factors key to landscape-scale coastal restoration: Lessons learned from three U.S. case studies. *Sustainability*, 12(3), 869. <https://doi.org/10.3390/su12030869>

13. Dewey, J. (1934). *Art as Experience*. New York: Minton, Balch & Company.
14. Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, 34(10), 906–911. <https://doi.org/10.1037/0003-066X.34.10.906>
15. Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.
16. heritage Council of Ireland. (2021). *Heritage in Schools Programme Annual Report*. <https://www.heritageinschools.ie>
17. Inostroza, J. C. (2023). Identity-based activities carried out through engraving and stamping exercises: Art mediation workshops based on local engravers' works and aimed for students from the city of Tomé in Chile. *Education and New Developments 2023 – Volume 2*. <https://doi.org/10.36315/2023v2end038>
18. Johnson, D. W., & Johnson, R. T. (1999). *Learning Together and Alone: Cooperative, Competitive, and Individualistic Learning* (5th ed.). Boston: Allyn & Bacon.
19. Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice Hall.
20. Lewis, M. L., Albury, J. D., & Kwong, M. (2023). Peer mentoring: A case study in developing legislative advocacy skills among social work students. *Social Development Issues*. <https://doi.org/10.3998/sdi.4489>
21. Lin, T.-Y., & Hung, T.-M. (2022). How to reduce errors and improve transparency by using more precise citations. *Frontiers in Cardiovascular Medicine*, 9. <https://doi.org/10.3389/fcvm.2022.866279>
22. Mezirow, J. (1991). *Transformative Dimensions of Adult Learning*. San Francisco: Jossey-Bass.
23. Mohi, A. (2002). *The Philosophy of Restoration in Islamic Art*. Cairo: Madbouli Library. (In Arabic)
24. Oe, H, Yamaoka, Y., & Ochiai, H. (2022). A qualitative assessment of community learning initiatives for environmental awareness and behaviour change: Applying UNESCO Education for Sustainable Development (ESD) Framework. *International Journal of Environmental Research and Public Health*, 19(6), 3528. <https://doi.org/10.3390/ijerph19063528>
25. Petre, C. (2023). Continuous assessment and synthetic assessment – elements of pedagogical technique. Curriculum case study: Personal development. *The „Black Sea” Journal of Psychology*, 14(3). <https://doi.org/10.47577/bspsychology.bsop.v14i3.246>
26. Piaget, J. (1972). *The Psychology of the Child*. New York: Basic Books.
27. Potocnik, R. (2020). Heritage preservation education: Teachers' preconceptions and implementation in visual arts classes. *CEPS Journal*, 10(2), 49–76.
28. Salagean-Mohora, I., Anghel, A. A., & Frigura-Iliasa, F. (2023). Photogrammetry as a digital tool for joining heritage documentation in architectural education and professional practice. *Buildings*, 13(2), 319. <https://doi.org/10.3390/buildings13020319>
29. Sadiq, M. (1995). *Plastic Art in Jordan*. Jordan History Committee, Amman, Jordan.
30. Stoner, J. H., & Rushfield, R. (Eds.). (2013). *Conservation of Easel Paintings*. Routledge, London.
31. Thote, P., & Sen, R. K. (2019). Experiential learning: Inclusive art education for joyful learning. *International Journal of Research - Granthaalayah*, 7(11), 210–218. <https://doi.org/10.29121/granthaalayah.v7.i11.2019.3717>
32. UNESCO. (2021). *Learning for Cultural Heritage: Pedagogical Approaches and Policies*. Paris: UNESCO Publishing. Retrieved from <https://unesdoc.unesco.org>

33. UNESCO. (2022). *Re|Shaping Policies for Creativity: Addressing culture as a global public good*. Paris: UNESCO Publishing.
<https://unesdoc.unesco.org/ark:/48223/pf000038093>
34. Verbeeck, M., & Breuil, M. (2014). Teaching conservation-restoration in an art school: Sharing experiences. *CeroArt Journal*. <https://doi.org/10.4000/ceroart.4008>
35. Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.
36. Wang, B. (2023). Oil painting within the framework of art education to support local ethnic cultures and preserve cultural heritage in China. *Arte, Individuo y Sociedad*. <https://doi.org/10.5209/aris.87531>
37. Wang, J., Liu, Y., Liu, M., Wang, S., Zhang, J., & Wu, H. (2022). Multi-phase environmental impact assessment of marine ecological restoration project based on DPSIR-cloud model. *International Journal of Environmental Research and Public Health*, 19(20), 13295. <https://doi.org/10.3390/ijerph192013295>