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Creating Kholmogory bone carving artworks inspired by the art of the Maya civilization: scientific and pedagogical experience

Abstract. The article examines an experimental educational project by students under the guidance of a teacher, dedicated to the development and creation of bone carving artworks, executed in the style of Maya culture using traditional Kholmogory bone carving art techniques. The article reveals the goals and objectives of the project with a detailed description of the implementation stages. It provides a methodological rationale and description of Mayan cultural artifacts, their meanings and symbolism. The study demonstrates the possibilities of synthesizing diverse artistic traditions and technologies in contemporary traditional applied art.

Keywords: bone carving art, Kholmogory bone carving art, artistic items, Mesoamerican culture, artifacts, Maya, technology, symbolism.

Artistic bone carving has a centuries-long history of development. In the context of Mesoamerican civilizations (specifically the Maya and Aztec), it was a significant part of artistic culture, though it did not hold a dominant position. Bone was used to create jewelry, tools and ritual items for sacrifices and burials [2; 4; 5; 6], which were distinguished by high artistic expressiveness.

The Russian university of traditional art crafts provides professional training in the field of artistic bone carving. The content of the educational program is based on studying the technical and artistic techniques of Kholmogory artistic bone carving. This traditional art craft encompasses virtually all types of carving (relief, openwork, round sculpture, engraving) and execution technologies (inlay work, staining, turning, marquetry, etc.).

A research project was conducted by the teacher together with students, the goal of which was the development and creation of artistic bone pieces executed in the style of Maya art, based on the traditional techniques of Kholmogory artistic bone carving.

Within the framework of the academic discipline “Performing skills”, the research-based and practical components of the study were implemented, including the following stages:

- conducting preparatory research work: studying the cultural objects of the Maya and Aztec civilizations, collecting and systematizing information sources. This provided a foundation for the subsequent practical implementation of the project;

- developing design projects for the items, taking into account the characteristics of the selected materials and their manufacturing process;
- manufacturing artworks in material: executing pieces made of bone and wood using the traditional artistic techniques of Kholmogory bone carving art. This stage contributed to the formation of professional performing skills, the development of artistic perception and technical abilities among the students.

Four third-year bachelor's students were involved in the implementation of the set tasks: Maxim Morozov, Henri Alyev, Natalia Sapega and Ksenia Popova (Figs. 1-3⁴⁷).

The research involved combining a theoretical analysis of the artistic features of Maya artworks with the practical consolidation of manual artistic skills, using traditional techniques of Kholmogory artistic bone carving. At every stage of the work, the students' level of training, their professional knowledge and their practical skills in artistic bone carving were taken into account.

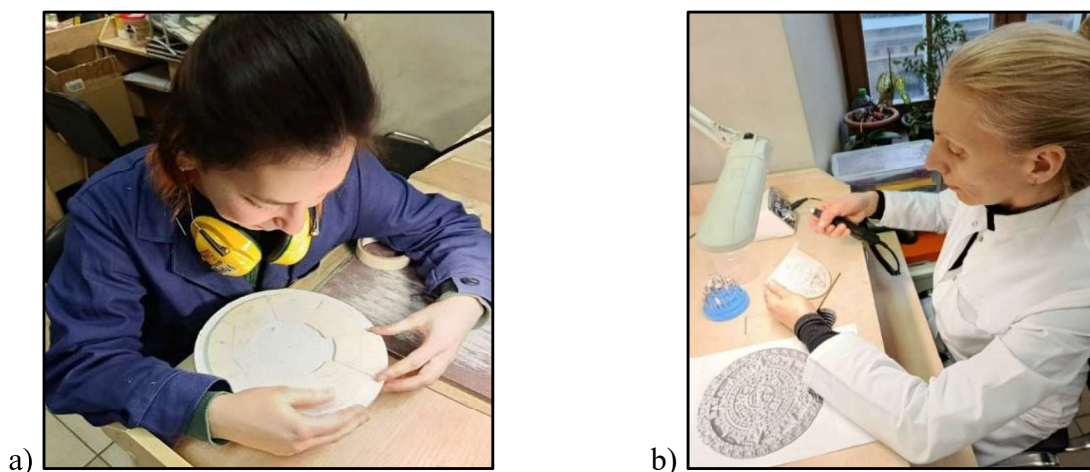


Fig. 1. Students in the process of creating the panel “Sun Stone”:
a) A student is selecting and fitting veneers onto the disk;
b) A student is carving the relief image of the central part of the disk

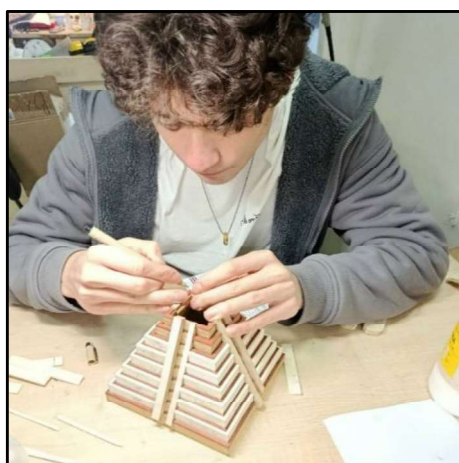


Fig. 2. A student in the process of making the “Mayan pyramid” casket



Fig. 3. A student in the process of making the panel “Maya deity”

⁴⁷ Figs. 1-4, 6, 11-14. Photo by the author of the article.

Students who had mastered the basic techniques of artistic bone carving – including openwork, relief and sculptural carving, as well as inlay work – proceeded to create a series of artworks based on a synthesis of the artistic traditions of the Maya civilization and the technological and aesthetic principles of the Kholmogory school of bone carving art.

The work within this research was aimed at expanding professional competencies. It involved students mastering a number of complex technological operations and bone-working techniques that they had not previously studied. The new technologies mastered during the production of bone pieces included: lathe processing of bone, fabrication of complex structural elements, bone staining techniques to achieve an imitation of semi-precious stones (jade, malachite) and inlay techniques.

The implementation of the set objectives during the work on the items within the framework of this research required students not only to conduct an in-depth study of technological processes and their practical application, but also to actively apply critical thinking skills:

- analysis of alternative solutions (for example, staining bone to imitate semi-precious stones – such as jadeite and malachite);



Fig. 4. The instructor in the process of creating a piece reproducing the mosaic mask found in the ancient city of Palenque, Mexico

- assessment of the feasibility of applying certain techniques (e.g., inlay work, lathe operations, relief carving and toning/staining of each piece);

- forecasting potential errors and methods for their elimination, such as degreasing and drying the bone to prevent deformations, as well as selecting appropriate materials and technologies corresponding to the future projects' designs.

Under the instructor's guidance, students completed the following artistic bone pieces: a round decorative panel "Sun Stone" (Piedra del Sol), a casket "Mayan pyramid" and a rectangular decorative panel featuring a relief depiction of a Maya deity. Additionally, the mask created by the author of this article was executed in the mosaic technique using stained bone (Figs. 4, 13).

Considering the multifaceted nature of technological processes associated with creating artistic bone pieces, their execution is variable and depends on the specifics of the materials used (bone, wood, horn, etc.), the sequence of operations and other factors related to solving the set objectives.

At the first stage, students conducted research work involving the collection and analysis of source materials necessary for designing each artwork. They also carried out an information search from various sources, including electronic databases, scientific publications and reproductions of artifacts. Particular attention was paid to studying images and descriptions of Maya material culture objects, as

well as their symbolism, to ensure a deeper understanding of the ancient civilization's artistic and cultural features.

Thus, the artifact known as the “Sun Stone” (Piedra del Sol) represents a monumental embodiment of cosmological ideas and calendar systems (Fig. 5⁴⁸). Compositionally, the artifact is organized as a system of concentric elements: a central disk and several surrounding rings, which presumably encode calendar cycles.

The central disk contains an image of the solar deity (Tonatiuh) holding human hearts; four squares around it symbolize the four eras (“Four Suns”). The first ring includes pictograms corresponding to the twenty days of the sacred calendar [3]. The second and third rings carry additional symbolism associated with calendar cycles and the cosmological views of the Aztecs and Maya [7].

During the research, students analyzed the symbolism of the “Sun Stone” in detail. Based on the studied material, a replica of a fragment of the artifact was developed and crafted from bone. It reproduced the following: the central disk with the depiction of the deity and the symbolism of the four eras; the first ring with a set of pictograms encoding the days of the sacred calendar (Fig. 6).

The studied material laid the foundation for further development of technical drawings and design solutions, ensuring that the chosen dimensions met the requirements of aesthetic harmony and ethnographic accuracy.



Fig. 5. Sun Stone. Basalt.
c. 1479. National museum of anthropology,
Mexico City (Mexico)



Fig. 6. Panel “Sun Stone” (Calendar).
Bone (“shank”), oak wood

At the second stage, the design of the item was based on the architectural forms of Mesoamerican culture, such as the pyramids of Chichen Itza and Palenque

⁴⁸ Fig. 5. Deciphering the imagery on the Sun Stone (often referred to as the Aztec Calendar) – Text : electronic // A-GALLERY : [site]. – URL: <https://a-gallery.ru/tpost/lgsn1je3n1-rasshifrovka-izobrazheniya-na-kamne-soln?ysclid=mtu2w9c0i4574330988> (Accessed: 15.08.2026).

(Figs. 7⁴⁹, 8⁵⁰). The objective was not to copy but to create a new artwork that combines elements from both monuments, intended for working with traditional materials of bone carving art – bone and wood.



Fig. 7. The Pyramid in Palenque and the “Temple of the inscriptions”. 7th century. Mexico City (Mexico)



Fig. 8. Pyramid of Kukulcan (Chichen Itza) and the “Temple of Kukulcan”. 8th–12th centuries AD. Mexico.



Fig. 9. Mosaic mask found in the ruler's tomb of the “Temple of the inscriptions” at Palenque, Mexico

During the work, an analysis was conducted of reproductions of artifacts such as the “Sun Stone” disk, the jadeite funerary mask of the Palenque ruler (Fig. 9⁵¹) and a depiction of a Maya deity on animal bone (Fig. 10⁵²). Their study aimed at creating bone carving pieces while taking into account the technological characteristics of workable bone and its processing methods. A plan for the sequence of technological operations for manufacturing each item was developed.

The third stage was the most challenging part of the project, as it involved executing the artworks in material.

The manufacturing of the items can be divided into three stages of the technological process: preparatory, main (involving artistic treatment) and final [1].

Preparatory operations include: boiling the bone (tubular bones), drying, selection and sorting of the material, sawing the material into parts (workpieces) with a certain allowance for subsequent shaping to precise dimensions, preparing veneers for inlay work and their bleaching or staining.

⁴⁹ Fig. 7. Temple of the inscriptions. – Text : electronic // Wikipedia : [site]. – URL: https://ru.wikipedia.org/wiki/Храм_надписей?ysclid=mtpqq7n9b6642389882 (Accessed: 06.08.2026).

⁵⁰ Fig. 8. Pyramid of Kukulcan. – Text : electronic // Wikipedia : [site]. – URL: https://ru.wikipedia.org/wiki/Пирамида_Кукулькана?ysclid=mtpqul4goy812769158 (Accessed: 06.09.2026).

⁵¹ Fig. 9. Alberto, Rus. The Maya People / Rus Alberto. – Text : electronic // Electronic library RoyalLib.com : [site]. – URL: https://royallib.com/read/rus_alberto/narod_mayya.html#0 (Accessed: 20.08.2026).

⁵² Fig. 10. Mayan-Bone-Carving. – Text : electronic // Trocadero : [site]. – URL: <https://www.trocadero.com/stores/ancientartifacts/items/1402291/Masterpiece-Mayan-Bone-Carving-video> (Accessed: 14.06.2026).

Main operations (artistic treatment) are performed after the preparatory stage and include: creating the artistic form of the item, achieving a precise fit of elements during inlay work (sanding or fitting the sides of adjacent parts that join together), applying the pattern to the surface of the blanks, carrying out artistic processing of the material (hand and lathe carving), performing inlay [1].

Finishing operations are carried out after all the above-mentioned steps and include: final sanding and polishing of the piece (finishing operations), bleaching, toning, decorative development of the item's texture, assembly of the finished structure, etc. Technological operations could vary or remain unchanged depending on the complexity of the items.

As a result, the following artworks made of bone were created: the panel “Sun Stone”, the casket “Mayan pyramid”, the panel “Maya deity” and an inlaid mask executed in the Maya style (Figs. 6, 11-13).



Fig. 10. Relief plate. Mexico.
Bovine bone



Fig. 11. Panel “Maya deity”.
Bone (“shank”), oak wood

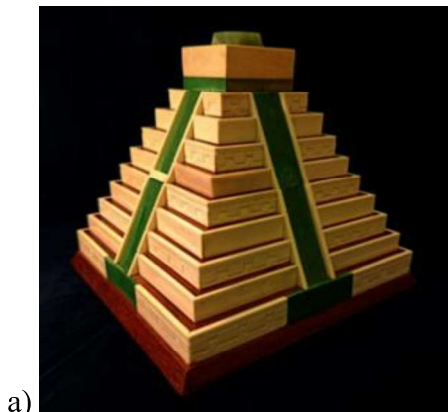


Fig. 12. “Mayan pyramid” casket: a) assembled (with tiered layers);
b) disassembled

Bone (“shank”), paduk and oak wood, jadeite stone

In the course of this work, students gained significant professional experience. They: consolidated their skills in working with tools and equipment; mastered a range of technological processes for the artistic treatment of decorative materials (bone, wood, stone); developed the ability to creatively rethink cultural and historical images; practiced project management – from sketch or draft to a finished bone item.

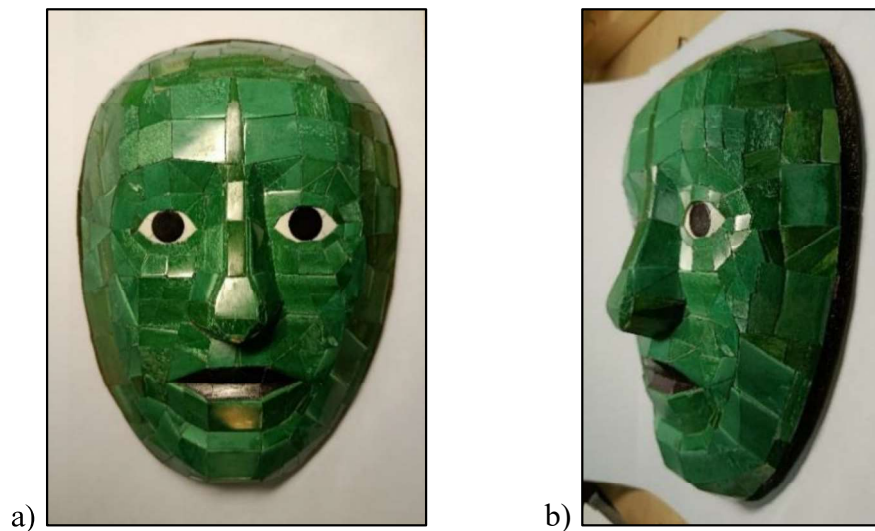


Fig. 13. Mask: a) Front view; b) Side view.
Bone (“shank”), black hornbeam wood, papier-mâché, velvet

From March 23 to 28, 2026, an exhibition of artworks inspired by the art of the Maya civilization – created by students and faculty of the Russian university of traditional art crafts – was held at the Russian house of science and culture in Paris. The opening took place during a gala evening dedicated to the scholarly legacy of the Russian ethnographer Yu.V. Knorozov.



Fig. 14. Bone carving artworks inspired by the Maya civilization: exhibition at the Russian house of science and culture in Paris (France)

The artworks presented at the exhibition demonstrated a wide range of expressive possibilities inherent in Russia’s traditional art crafts, including Kholmogory bone carving art (Fig. 14). They confirmed the potential of these art crafts in realizing unconventional and stylistically unique solutions dictated by complex artistic and technological challenges.

References

1. Kolobov V. N. *Texnologiya xudozhestvennoj rez'by' po kosti : uchebnoe posobie dlya studentov, obuchayushhixsya po napravleniyu podgotovki 54.03.02 Dekorativno-prikladnoe iskusstvo i narodny'e promy'sly', profil' – xudozhestvennaya rez'ba po kosti* / V. N. Kolobov ; Vy'sshaya shkola narodny'x iskusstv. – Sankt-Peterburg : VShNI, 2018. – 83 s. – ISBN 978-5-6042073- 6-9. – Tekst : neposredstvenny'j.
2. Ornament nosa majya iz chelovecheskoj kosti najden v Palenke. – Tekst : e'lektronny'j // Istoricheskij blog : [blog]. – URL: <https://www.thehistoryblog.com/archives/68172> (data obrashheniya: 15.03.2026).
3. Rasshifrovka izobrazheniya na Kamne solncza, kotory'j chasto nazy'vayut Kalendarem acztekov. – Tekst : e'lektronny'j // A-GALLERY : [blog]. – URL: <https://a-gallery.ru/tpost/lgsn1je3n1-rasshifrovka-izobrazheniya-na-kamne-soln> (data obrashheniya: 05.06.2026).
4. Rus A. *Narod majya* / A. Russ ; perevod s ispanskogo s sokrashheniyami E'. G. Aleksandrenkova ; nauchny'j redaktor i avtor predisloviya V. I. Gulyaev. – Moskva : My'sl'. 1986 – 256 s. – Tekst : neposredstvenny'j.
5. Rus A. *Narod majya* / A. Rus. – Tekst : e'lektronny'j // RoyalLib.com : e'lektronnaya biblioteka. – URL: https://royallib.com/read/rus_alberto/narod_mayya.html#0 (data obrashheniya: 20.04.2026).
6. E'meri Kitty F. *Kostny'e, rakoviny'e i kamenny'e artefakty', svidetel'stvuyushhie o remeslennom masterstve e'litny'x semej majya v Aguateke, Gvatemala.* / Kitty F. E'meri, Kadzuo Aoyama. – Tekst : e'lektronny'j // Cambridge university press : [sajt]. – URL: <https://www.cambridge.org/core/journals/ancient-mesoamerica/article/bone-shell-and-lithic-evidence-for-crafting-in-elite-maya-households-at-aguateca-guatemala/EF9D29D40A11A5FAC623BF58CF783FBA> (data obrashheniya: 10.05.2026).
7. David, Stuart *KING AND COSMOS An Interpretation of the Aztec Calendar Stone* / Stuart David. – San Francisco : Precolumbia Mesoweb Press, 2021. – 158 c. – ISBN 978-1-7350606-3-7. – Tekst : neposredstvenny'j.