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STUDYING THE QUALITY INDICATORS OF ACRYLIC PAINTS WITH SUEDE EFFECT DECORATED IN YOUTH CLOTHING

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The article provides a comparative analysis of the types of national patterns in the formation and decoration of modern youth clothing. In the preparation of modern youth clothing, the structure and use of “tört qulaq,” “qus

qanaty,” and “óńırjiek” ornaments among the national ornaments of the Kazakh people were substantiated. According to the analysis results, the study used the methods of artistic decoration of national elements with volumetric acrylic paints, decorating with an artistic painting of ornaments of a collection of modern youth clothing formed. We studied the influence of dyeing textile materials of mixed composition with acrylic paints and the quality indicators of test samples decoratively decorated with acrylic paints on textile materials. When decoratively finishing brushed “poker with fleece” fabric with “Decola” acrylic paint, applying the paint to the test sample created difficulties. As a result, we discovered that the paint did not lie smoothly on the fabric’s surface. Test samples of the “milana” suit fabric and raincoat material using “Pebeo acrylic paint with suede effect” acquired a 3D volume. We studied the color fastness of washing test samples, and high-quality indicators of color fastness with artistic ornamental finishing in 3D volumes were obtained for the material “raincoat” and the suiting fabric “milana.” When studying the performance of test samples in terms of hygroscopic properties, the raincoat material had a higher waterproof rating, and the “milana” suit fabric had a lower waterproof rating. As a result of the hygroscopic properties of materials, in the manufacture of a collection of youth clothing, “milana” suit fabric was used, and the decorative detail of the “back yoke” was made of raincoat material with a high waterproof rating. As a result of the study, the ornaments will be decorated with artistic painting with “Pebeo acrylic paint suede effect” with 3D volume and made of “raincoat” material and suiting fabric “milana” to create a collection of modern youth clothing. The artistic and decorative design of the clothing collection with 3D volumetric ornaments was formed, and modern clothing models that meet the tastes of youth, fashion trends, and market requirements were developed.

Keywords: textile, sample, paint, ornament, decoration, youth clothing.

ЖАСТАР КИІМІНДЕ БЕЗЕНДІРІЛГЕН КÜДЕРІ ӘСЕРІ БАР АКРИЛ БОЯУЛАРЫНЫҢ САПАЛЫҚ КӨРСЕТКІШТЕРІН ЗЕРТТЕУ

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Мақалада заманауи жастар киімінің сұлбасын қалыптастыруда және әрлеп безендіруде ұлттық киімдердегі ою-өрнектердің түрлеріне салыстырмалы талдау жүргізілді. Заманауи жастар киімін дайындауда қазақ халқының ұлттық ою-өрнектерінің ішінде «төртқұлақ», «құсқанаты», «өңіржиек» оюларының құрылымы мен қолданылуы дәйектелді. Зерттеуде ұлттық элементтерді көлемді акрил бояуларымен әрлеп безендіру әдістерін қолдана отырып, талдау нәтижелері бойынша қазіргі заманғы жастар киімдеріндегі ою-өрнектермен сәндеп көркемдеу қалыптастырылды. Акрил бояуларының аралас құрамды текстиль материалдарын бояудың әсері және текстиль материалдарында акрилді бояуымен әрлеп безендірілген сынақтық үлгілердің сапалық көрсеткіштері зерттелді. Қалың түкті покер материалын Decola акрилді бояуымен әрлеу кезінде, сынақтық үлгілерде бояудың жағылуы қиындық тудырды және нәтижесінде материалдың бетінде тегіс жатпайтындығы анықталды. Pebeo күдері әсері бар акрилді бояуымен милана костюмдік матасы мен жадағай материалдарының сынақтық үлгілері әрлеп-безендіруде 3D көлемге ие болды. Сынақтық үлгілердің жууға бояу тұрақтылығы сынақтан өткізілді, 3D көлемдегі ою-өрнекпен әрлеп-безендірілген бояудың беріктілігі жадағай материалы мен милана костюмдік матасы жоғарғы сапалық көрсеткішке ие болды. Гигроскопиялық қасиеттері бойынша сынақтық үлгілердің көрсеткіштерін зерттеуде, жадағай материалы су өткізбеу көрсеткіші жоғары, ал милана костюмдік матасының су өткізбеу көрсеткіші төмен болды. Материалдардың гигроскопиялық қасиеттері көрсеткіштерінің нәтижесінде, жастар киім жиынтығын дайындауда милана костюмдік матасы қолданылды және артқы бойда бір шеті бекітілген сәндік бөлшек иініш су өткізбеу көрсеткіші жоғары жадағай материалынан дайындалды. Зерттеу нәтижесінде, ою-өрнектер 3D көлемдегі Pebeo күдері әсерлі акрилді бояуымен безендіріледі және жадағай мен милана костюмдік матасынан заманауи жастар киім жиынтығын дайындалады. Киім жиынтығын 3D көлемдегі ою-өрнектермен сәндеп көркемдеу қалыптастырылды, жастардың талғамына сай, сән бағыттары мен нарықтық талаптарына жауап беретін заманауи киім үлгілері жобаланды.

Негізгі сөздер: мата, үлгі, бояу, ою-өрнек, әрлеп-безендіру, жастар киімі.

ИССЛЕДОВАНИЕ ПОКАЗАТЕЛЕЙ КАЧЕСТВА АКРИЛОВЫХ КРАСОК С ЭФФЕКТОМ ЗАМШИ, ИСПОЛЪЗУЕМЫХ В МОЛОДЕЖНОЙ ОДЕЖДЕ

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В статье проведен сравнительный анализ видов национальных узоров при формировании и художественном оформлении современной молодежной одежды. В подготовке современной молодежной одежды были обоснованы структура и использование орнаментов «торткулак», «кусканаты», «ониржиек» среди национальных орнаментов казахского народа. В исследовании, по результатам анализа, с использованием методов художественной отделки национальных элементов объемными акриловыми красками, было сформировано декорирование художественной росписью орнаментов коллекции современной молодежной одежды. Исследовано влияние окрашивания текстильных материалов смешанного состава акриловыми красками и показатели качества испытательных образцов, декоративно оформленных акриловыми красками на текстильные материалы. При художественно-декоративной отделке ткани «покер с начесом» акриловой краской «Decola», нанесение краски на испытуемый образец создавало трудности, и в результате было обнаружено, что краска не лежит гладко на поверхности ткани. Пробные образцы костюмной ткани «милана» и материала «плащевка» акриловой краской «Ребео с эффектом замши», приобрели 3D объем. Исследована устойчивость окраски к стирке испытательных образцов; высокие качественные показатели стойкости окрашивания с художественно орнаментальной отделкой в 3D объеме получили материал «плащевка» и костюмная ткань «милана». При изучении показателей тестовых образцов по гигроскопическим свойствам, материал «плащевка» имел более высокий показатель водонепроницаемости, а костюмная ткань «милана» имела более низкий показатель водонепроницаемости. В результате сравнение показателей гигроскопических свойств материалов, при изготовлении коллекции молодежной одежды, использовалась костюмная ткань «милана», а декоративная деталь «отлетная кокетка спинки» изготавливалась из плащевочного материала с высоким показателем водонепроницаемости. В результате исследования орнаменты будут оформлены художественной росписью акриловой краской «Ребео с эффектом замши» с 3D объемом и изготовлены из материала «плащевка» и костюмной ткани «милана» для создания коллекции современной молодежной одежды. Сформировано художественно-декоративное оформление коллекции одежды 3D объемными орнаментами, разработаны современные модели одежды, отвечающие вкусам молодежи, модным направлениям и требованиям рынка.

Ключевые слова: ткань, образец, краска, орнамент, отделка, молодежная одежда.

Introduction.

Costume design combines fashionable clothing silhouettes, elements of traditional culture, and current materials available in the modern market. The cultural vitality of traditional clothing must be preserved along with the concept of modern design towards creating a harmonious interaction between the civilization of the past and the present [1,2].

The characteristic systems of national ornaments, the basis of national clothing, developed closely with the formation of the Kazakh people and the culture of other Asian peoples who previously inhabited the country's current territory. Since time immemorial, ornamentation has been the basis of decoration, which is equally characteristic of all types of Kazakh craft [3,4].

Each ornament has its characteristics, meaning, and scope of application [5]. We chose the “tört qulaq” ornament for a talisman against

trouble, the «qus qanaty» ornament for flying freely in a clear sky, and the “ónirjiek” ornament for decorating the edge of clothing for the manufacture of youth clothing. The four branches of the “tört qulaq” ornament consist of zoomorphic or floral ornaments [6]. Four branches are used to make ornaments that form a circle, a “rectangle,” and a “tetrahedron.” These carvings were placed on the shoulder blades of the Hercules' outerwear and the trousers' knees. The “qus qanaty” ornament is in the form of bird wings, depicted with an ornament of horns or traces of chess flints. Moreover, this ornament, widely used in products, hints at a bird spreading its wings and flying freely [7,8]. The «qus qanaty» ornament continues to be combined with other patterns.

Materials and research methods.

The technology of hand-painted textile materials is an integral part of decorative and applied art [9]. Applying a pattern to fabric can only be

successful if the type of fabric and dyeing method are used correctly. Several important key features are needed when applying patterns to fabric materials [10].

The range of paints for clothing and textiles is large and varied. Before purchasing paints, you need to decide on the purpose of application and composition, fabric type, and attachment method. The method and purpose of applying paints are also comprehensive. There are paints for hand-made artistic painting; there are paints for drawing individual contours (offered in tubes with a thin spout), and there are also several paints for colorless thin fabrics and light and matte materials (with high hiding power). There are no restrictions in the choice of paints with color, texture, and different effects: transparent and opaque, metallic or glossy, neon and fluorescent [11].

High-quality Pebeo Setacolor dyes do not reduce the elasticity of the fabric. Its range will include neon paints designed for light and matte fabrics, with a suede effect suitable for professionals and amateurs. They are intended for home decoration, painting on clothes, or fabric [12].

Acrylic paint for Decola fabric, produced by the “Nevskaya Palitra” brand, produced in Russia. Decola paints are an environmentally friendly acrylic paint with a rich color range and high light resistance, made on a water basis. Decola paints mix easily with new shades and dry quickly to form a dense coating. Once the paint is dry, it can be fixed with an iron by placing a thin cloth over the painted area and ironing it on a medium setting. This process ensures they do not fade and retain their strength and color brightness even after many washes [13].

When we applied them with Pebeo Suede Effect paints, the colors looked rich and shiny. The suede effect of the paint gives the design a soft and velvety appearance once ironed onto the

fabric. Its rich texture is especially suitable for finishing various fabrics [14].

In this study, the test samples included “raincoat” fabric (100% PE), faux leather (96% polyurethane, 4% elastane), “poker without fleece” suiting fabric (30% cotton, 60% PE), “milana” suiting fabric (20% artificial wool, 80% polyester), “poker with fleece” fabric (30% wool, 30% viscose, 35% polyester, 5% elastic) and acrylic paint “Decola,” paint “for matte and light fabrics Pebeo”, acrylic paints “Pebeo with suede effect” were chosen for artistic decoration. The color fastness to washing materials, with artistic and ornamental design with acrylic paints in youth clothing, was tested in the laboratory of the Almaty Technological University according to GOST 9733.4-83 and friction strength GOST 9733.6-83, hygroscopicity GOST 3861-81.

Results and discussion.

We washed selected textile materials in a washing machine to check how much they shrink when washed, and after drying, we subjected them to wet-heat treatment. The selected ornament on the materials is copied with a thermal pen using carbon paper according to a particular sample. In this case, in order to observe the volumetric increase in the paint “Pebeo with suede effect,” the “qus qanaty” ornament pattern was chosen. In test 1 samples, the ornament was decorated with “Decola” acrylic paint. In test 2 samples, acrylic paint, “Pebeo for dark and light fabrics,” was used to finish and decorate the ornament. In test samples, it was found that “Decola,” the acrylic paint when coloring the ornament, is incompatible with applying “poker with fleece” and “faux leather” to the fabric (Fig. 1). Applying paint to a thick fabric with a fleece during finishing and decorating causes difficulties and, as a result, does not lie smoothly on the surface of the material, and nor does not cover the synthetic material of a dark shade.



Figure 1. Artistic design of test samples using acrylic paints “Decola” and “Pebeo for dark and light fabrics”

On the 3 trial samples, the ornament was artistically decorated with acrylic paint “Pebeo with suede effect.” The test samples are left to dry for twelve or twenty-four hours after painting. After

drying, we ironed the front side of the thin cotton fabric. During the wet-heat treatment, the “milana” suiting fabric and the “raincoat” fabric, the “poker without fleece” fabric acquired a 3D vol-

ume. The “poker with fleece” fabric made dyeing difficult during finishing, and the volumetric lift effect after drying was rated as low. This type of paint is unsuitable for faux leather.

The result of the decorative finishing of test samples with 3D ornaments after wet-heat treatment is presented in Figure 2 [15].



Figure 2. Finishing and decorating test samples with “Pebeo suede-effect” acrylic paint

During the tests for color fastness to washing, test samples were prepared with ornamental decorative-finished acrylic paint “Decola” and paints “for dark and light fabrics Pebeo,” with a volume of 3D acrylic paint “Pebeo with suede effect.” The washing process of the test samples was performed at 30°C, 40°C, 60°C, each temperature representing a different common washing condition, as performed in Table 1. No change was observed in all test samples washed at 30°C, 40°C.

As a result of tests, when washed at 60°C, samples with 3D volume ornaments finished with acrylic paint “with a Pebeo suede effect” showed

lasting results. Visible cracks appeared on the surface of 1 test sample, artistically decorated with “Decola” acrylic paint, and 2 test samples, finished with paint “Pebeo for dark and light fabrics.” It is recommended to wash clothes finished with trial types of dyes in a hand or washing machine, preferably at a temperature not exceeding 40°C, if more washes are required. Based on the results of tests for color fastness to washing, it was established that finishing modern youth clothing with 3D decorative acrylic paint “with Pebeo suede effect” complies with the specified standards for garments according to GOST 9733.4-83 standards.

Table 1. The appearance of test samples after tests for colorfastness to washing

№	Test samples	Types of acrylic paints		
		Decola. Article: 4128220	Pebeo for dark and light fabrics. Article: PEB-295-043	Pebeo with suede effect. Article: P-295301
1	Raincoat fabric			
2	Faux leather			
3	Poker fabric without fleece			
4	Suiting fabric Milana			
5	Poker fabric with fleece			

The strength test of the paint when finishing the ornament on 3D samples was performed on the PT-4 “Tekstilmashpribor” device. The test samples were treated with “Pebeo for dark and light fabrics” paint, “Pebeo with suede effect” paint, and “Decola” acrylic paint.

1 test sample showed a 4-point result when testing paint strength in decorative decoration with Decola acrylic paint. 2 test samples, finished

with “Pebeo paint for dark and light fabrics,” showed a 4-point result. Test samples in 3D volume, finished with “Pebeo acrylic paint with suede effect,” showed a 5-point high result. As a result of the study, on test samples made of suiting fabric “Milana” and “raincoat” fabric, when decorating the ornaments with 3D acrylic paint “Pebeo with Pebeo suede effect,” the strength of the paint received high-quality indicators.












Figure 3. Strength test of acrylic paints for artistic decoration of samples with ornaments

When making youth clothing, it should be borne in mind that the primary function of demi-season outerwear is to protect the consumer from harmful environmental influences and precipitation. Therefore, we studied the hygroscopic properties of the test samples. According to the study results presented in Table 2, artificial leather

showed the highest 100% index among all the tested samples.

However, as a result of a preliminary study of the breathability of the test samples, it was found that the artificial leather material has poor breathable properties; of the other test samples, the breathability indicators of the Milan suit material and the raincoat material satisfy.

Table 2. Hygroscopicity indicators of test samples

№	Photo of test samples	The results	Hygroscopicity indicators, %
1			The hygroscopic properties of the “raincoat material” are 80%. It was positively assessed as an average rate.
2			The hygroscopic properties of the milana costume fabric are 10%.
3			The water-repellent properties of the “artificial leather” material showed 100%. It is a high rate.
4			The water permeability of the “poker fabric without fleece” was 0%. It is a lower rate and does not match the standards.
5			The water permeability of “the poker fabric with a fleece” was 60%. It was positively assessed as an average rate.

The results of the study of the hygroscopic parameters of the test samples are presented in Table 2. In the manufacture of youth clothing from materials of various indicators, depending on the processing procedure, exceptions are included when combining the material of the raincoat and the milana suit fabric. When studying the performance of test samples for hygroscopic properties, the “raincoat” fabric had a high water resistance

rate, and the “milana” suit fabric had a low water resistance rate.

Conclusion

The color fastness to washing was tested for test samples, artistically decorated with ornaments in 3D volume. During tests of color fastness to washing, the material of the raincoat and the “milana” suit fabric gave quality indicators that meet standard requirements. As a result of the

study, in tests of color fastness to washing, a decorative and finishing design was formed with “Pebeo with suede effect” paint with a 3D pattern in the manufacture of modern clothes. For care, washing at a temperature not exceeding 40°C is recommended. Faux leather is not used due to poor performance in tests for breathability and color fastness to washing.

When creating youth clothing, “milana” suiting fabric was used, and the decorative detail – the “flattened yoke” of the back, was made of a highly waterproof raincoat material. As a result, modern youth clothing, skillfully decorated with “Pebeo suede effect” paint with 3D voluminous patterns, has increased competitiveness in the market and meets the demand of modern youth.

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