



**MODERN SCIENCE
AND EDUCATION: PROBLEMS
AND DEVELOPMENT PROSPECTS**

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MODERN SCIENCE AND EDUCATION: PROBLEMS AND DEVELOPMENT PROSPECTS

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and Iryna Ostopolets

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THEORY AND PRACTICE OF DESIGN PREPARATION OF FASHION PRODUCTION USING COMPUTER TOOLS

As a result of the pandemic and the quarantine caused, the demand for products from the fashion industry has significantly decreased. This set clothing manufacturers the task of reducing costs, creating competitive models, improving the efficiency of production preparation. One way to reduce the time required to develop new clothing models with improved aesthetic and ergonomic features is the use of computer-aided design technology. Therefore, the problem of improving the quality of design preparation of the production with the use of computer design is relevant for the fashion industry.

The design preparation of the fashion industry includes the design of new models and the modernization of previously produced ones. In the designing process, the nature of the product, its design, appearance, technical and economic and other indicators are determined. The results of design preparation are made out in the form of technical documentation – drawings, specifications of materials, details and knots, samples of finished goods, etc.

Traditional for the fashion industry scheme design preparation "model – design" has been criticized by scientists, and its improvement has been the subject of research.

Scientists of the Kyiv Light Industry Technology Institute (now KNUTD) proposed a five-stage scheme based on the standards of the Unified System of Design Documentation (DSTU 3321: 2003)⁶³: 1) terms of reference; 2) technical proposal; 3) sketch project; 4) technical project; 5) working documentation⁶⁴. However, interviews with experts show that in practice there are usually no clear boundaries between the individual stages of the process of designing clothes because of their interconnectedness and the creative nature of design work.

Research has shown that it is impossible to accelerate the process of designing models if each model is considered as an individual, newly designed. The technology of designing models developed by Agoshkov⁶⁵ by rational assortment series allows to create a complex of different clothes models of one assortment taking into account individual features of consumers, features of the constructive decision of clothes, decoration, materials.

In modern research to emphasize the importance of design approach to the design of consumer products instead of the term "design preparation of production" is more often used "design-projecting", or "designing".

A significant contribution to the theory of design and technological preparation of fashion production is a study⁶⁶ on the problem of flexible reorientation of design and technological preparation of production with the use of expert systems. The concept of functioning of the simulation model of the process of design elaboration of the chain of transformation of model decisions of clothes is valuable.

An important aspect of design preparation production is consumer orientation.

Formalization of consumer-oriented clothing design is discussed in the article⁶⁷.

The integral connection between the parameters of clothing design and the properties of materials has become one of the leading areas of research on design preparation production. The study of Pashkevich, Kolosnichenko, Kolosnichenko, Ostapenko, and Yezhova⁶⁸ is important, which considers the main stages of design of women's coats of basic tectonic shapes from different

⁶³ DSTU 3321:2003. Design documentation system. Terms and definitions of basic concepts.

⁶⁴ Sushan, A. T. (2007). Engineering design of garments. Kyiv: Aristei.

⁶⁵ Agoshkov, L. A. (1987). Designing clothes with rational assortment series. Kiev: KTILP.

⁶⁶ Zakharkevich, O. V. (2018). Development of Scientific Fundamentals to Ensure the Flexibility of Clothing Design using Expert Systems. Doctor of Technical Science theses. Kherson: Kherson national technical university.

⁶⁷ Kuleshova, S., Zakharkevich, O., Koshevko, J., & Ditkovska, O. (2017). Development of expert system based on Kansei engineering to support clothing design process. *Vlakna a Textil*, 24 (3), 30-41.

⁶⁸ Pashkevich, K., Kolosnichenko, M., Kolosnichenko, O., Ostapenko, N., & Yezhova, O. (2018). Study of properties of overcoating fabrics during design of women's clothes in different forms. *Tekstilec*, 61 (4), 224-234.

materials. The article by Pashkevich, Yezhova, Kolosnichenko, Ostapenko, and Kolosnichenko⁶⁹ provides recommendations on the design parameters of the decorative elements of dresses – ruffles of different density and weave materials.

Modern designers are actively using the possibilities of computer 3D design to create new clothing models. The problem of three-dimensional design is devoted to research in the following areas: the design of virtual mannequins⁷⁰, 3D virtual fitting⁷¹, virtual stitching of the woman's dress⁷², woman's dress digital try-on⁷³, 3D prototypes multicolored printing⁷⁴, 3D printing of clothes⁷⁵, 3D printing of Iris van Herpen's Fashion collection⁷⁶. The research⁷⁷ is devoted to the analysis of digital technologies trends of fashion development.

The purpose of this study is to systematize and summarize the main stages of design preparation of production using computer design. The results of the scientific research are embodied on the example of a creative collection of women's clothing with improved aesthetic characteristics.

To achieve this goal, the methodology of a systematic approach to the design of creative collections, analysis and synthesis to create the image of the consumer, the method of creative analogy in the analysis and transformation of the creative source. CorelDRAW graphics software was used to build technical sketches, and Redcafé CAD was used to draw.

Characteristics of the process of designing a creative collection of clothing models. Clothing collection is a combination of clothing models with a single concept based on the principles of unity of image, style, fashion trends, shape, materials, color, decorative and design and technological solutions of all elements⁷⁸.

All collections of models by purpose are divided into the following types: author's, industrial and special.

An author's collection is one that has a certain artistic expressiveness, which is expressed by a creative idea, a designer's concept. It may involve creating new trends next season. Such a collection is created with the help of certain means of artistic expression. It can be contrast, identity, nuance, stylization, grotesque, outrage, rhythmicity, symmetry or asymmetry, and so on. The main purpose of the author's collection was to demonstrate the author's style and creative potential of the designer.

Author's collections include: collections created for participation in creative competitions, for demonstration at international exhibitions and fairs, as well as for presentations in various places, as well as collections "Haute Couture", "Pret-a-Porter" or "Ready-to-Wear", "Capsule", "Pre-fall", "Resort".

⁶⁹ Pashkevich, K., Yezhova, O., Kolosnichenko, M., Ostapenko, N., & Kolosnichenko, E. (2018). Designing of the complex forms of women's clothing, considering the former properties of the materials. *Man-make Textiles in India*, 46 (11), 372-380.

⁷⁰ Yezhova, O. & Pashkevich, K. (2021). Constructing virtual mannequins with different postures for purposes of 3D designing of the clothes. *Songklanakarin journal of science and technology (SJST)*. 43 (2), 392-397.

⁷¹ Hwang Shin, S. J., & Lee, H. (2020). The use of 3D virtual fitting technology: comparison between sourcing agents contractors and domestic suppliers in the apparel industry. *International Journal of Fashion Design, Technology and Education*, 13 (3), 300-307.

⁷² Zhu, G., & Song, W. (2020). Patterns simulation in the 3D virtual stitching and try-on system. *International journal of clothing science and technology*.

⁷³ Agnè, L. A. G. È., Ancutienè, K., Pukienè, R., Lapkovska, E., & Dāboliņa, I. (2020). Comparative Study of Real and Virtual Garments Appearance and Distance Ease. *Materials Science*, 26 (2), 233-239.

⁷⁴ Chan, I., Au, J., Ho, C., & Lam, J. (2020). Creation of 3D printed fashion prototype with multi-coloured texture: a practice-based approach. *International Journal of Fashion Design, Technology and Education*.

⁷⁵ Kang, M., & Kim, S. (2019). Fabrication of 3D printed garments using flat patterns and motifs. *International journal of clothing science and technology*, 31 (5), 653-662.

⁷⁶ Smelik, A. (2020). Fractal Folds: The Posthuman Fashion of Iris van Herpen. *Fashion Theory – the journal of dress body & culture*.

⁷⁷ An, H., & Park, M. (2020). Approaching fashion design trend applications using text mining and semantic network analysis. *Fashion and Textiles*, 7 (1), 1-15.

⁷⁸ Malynska, A. M., Pashkevich, K. L., Smirnova, M. R., & Kolosnichenko, O. V. (2018). Development of clothing collections: textbook. Kyiv: Profi.

Haute Couture collections are exclusive products of very high quality with a high percentage of handmade use, created in a single copy or in very limited quantities. Haute Couture can only be used by designer brands that are members of the Haute Couture Syndicate, but only Parisian Fashion Houses can be members. Foreign companies can become corresponding members of this organization⁷⁹.

The Pret-a-Porter or Ready-to-Wear collections are models that are later released in large batches for mass production. Such clothes can be purchased in large department stores or boutiques. Pret-a-Porter collections are the main source of income for fashion brands and are shown twice a year at Fashion Weeks⁸⁰.

Capsule collection is a limited collection that is released in collaboration with a famous person or dedicated to a specific event. Usually such a collection consists of 10... 30 products.

Pre-fall collections are off-season collections that announce new trends ahead of the upcoming autumn-winter season.

"Cruise" or "Resort" collections are cruise (resort) collections designed for those who are going to go on vacation to warmer regions, so they consist mainly of summer clothes (swimwear, beachwear, evening and cocktail dresses, etc.). The number of models in such collections is small. They are characterized by a simpler cut and they are made mainly of light fabrics.

The industrial clothing collection is a collection based on promising models from the author's collections for mass production. Such collections reflect new styles and fashion trends after their appearance in ready-to-wear collections. Models of industrial collections usually embody adapted fashion elements and have proven cut options.

Special collections are collections that are developed for a specific order, taking into account the relevant requirements. Special purpose collections include school uniform collections, uniforms for employees of various institutions and organizations, etc.

The process of creating each collection is very individual, but there are certain patterns of formation of collections and general requirements for them.

The first step in creating a creative collection is to set a goal and find the target audience. Before starting the design, the designer must have a clear idea of who the future collection is intended for and what needs its models should meet.

Then you need to form a concept – the main idea, which is developed on the basis of the forecast. Therefore, it is necessary to analyze fashion trends and use some of them in the future collection, so that it was favorably received by consumers. At this stage, the designer creates a collage or tablet of ideas, draws several dozen for-sketches. There should also be dynamics in the development, ie the development of a creative idea, the elements of which would be visible in each model, making the collection stylistically coherent.

The third stage is the selection of fabrics and materials from which the collection will be made. The main task is to match them to the chosen concept, choosing a color and texture that would enhance the sound of the main idea.

After selecting the fabrics, the designer begins to create sketches, then selects the best and approves them.

After approval of the models of the future collection, the sketches are sent to designers and technologists, who will develop patterns and select the processing technology based on the selected fabric, the presence of the substrate and other nuances.

The next step in creating a collection is to sew layouts that allow you to see all the shortcomings of the design and make the necessary corrections. After that, the patterns of the models are improved and products are made.

A presentation is being prepared for the finished collection.

Because the collection is not just a series of models, and the whole composition, it has its own laws. Harmony and unity in stylistic decision is achieved through the means of artistic expression:

⁷⁹ Kolosnichenko, M. V., Protsyk, K. L. (2011). Fashion and clothing. Fundamentals of clothing design and production. Kyiv: KNUTD.

⁸⁰ Ibidem.

contrast, nuance or identity. Also an important component of the composition is the rhythm, which gives dynamics to the whole collection, thus enhancing the sound of the main theme. The main condition of holistic perception is the color harmony of the collection models.

So, in accordance with the sequence of construction of the collection, all the rules and laws of composition, its demonstration, complemented by decorations, interior design, musical accompaniment and lighting solutions, is a holistic harmonious work of art.

At the first stage of the study, the consumer's choice, age, gender, lifestyle, socio-financial status, etc. were made.

To compile the characteristics of consumers are guided by the main size and age characteristics, body type, emotional and psychological characteristics (attitude to fashion, choice of style in clothing, wardrobe formation), social traits and more.

After researching the field of consumption, a group of consumers was identified for whom the collection will be designed. The main target audience was girls and women (16...45 years old) with a pronounced expressiveness in character, who want to look stylish both in everyday life and at special events or weekends. They like to combine styles. For example, romantic with sports with the addition of elements of classics. These are creative people who like to wear exclusive things and who are not afraid to stand out from the crowd, look unique and attract public attention with bright colors and atypical clothing models. Such consumers can be both students and people of different creative professions (photographers, artists, illustrators, web designers, writers, hairdressers, bloggers, etc.), as well as teachers, entrepreneurs, IT workers and more. They like to wear comfortable but stylish clothes.

Denim clothes can always be considered stylish and comfortable. These can be baggy jeans, culottes, oversized t-shirts and blouses, bomber jackets, cropped jackets, midi skirts, trench coats and more.

Their earnings are not fixed, so they can spend on clothes from 30 to 70% of income. Such women consumers are very progressive, far-sighted, but at the same time very romantic personalities. They lead an active life, they are inspired by their profession, to which they devote a significant part of their time.

The majority of such consumers are women of medium height (164...170 cm) and S size (44...46), the first full group with normal posture and proportions.

The purpose of designing the collection is to create clothes that modern girls and women would like to wear. To do this, we analyzed the women's range, which is determined by the following characteristics: age, season, purpose, style, material, silhouette, type of clasp, sleeve cut, articulation (vertical, horizontal, and combined), type of pockets, collar design, finish.

The study found that a potential buyer of exclusive denim clothing are women with medium or high levels of material security, who work hard, so they like to walk around the city in spectacular images. They try to follow the fashion trends and shows of the latest collections of famous brands and are not afraid to experiment with styles, colors, shapes and textures.

Functional and technological analysis of the project object. In the process of designing clothes, depending on its purpose, set certain requirements, which can be divided into two groups – consumer and industrial (technical and economic). Each of the groups has its own subgroup of indicators, the importance of which is justified by the type, range and purpose of the product.

In the future, a women's set for everyday use for the spring-summer season will be developed. Therefore, when designing it puts forward a range of consumer and economic requirements.

Consumer requirements include: aesthetic, functional, ergonomic, operational and social:

- aesthetic requirements for the dress are characterized by the novelty of the model and design (modern silhouette, cut, color, texture of materials, decoration and shape of details), the degree of perfection of the model (integrity of form and conformity of design to material choice), appearance, interior processing and expressiveness of trademarks);
- functional requirements are characterized by the conformity of the product to a specific purpose: age and size-complete characteristics of the consumer, his appearance and psychological development;

- ergonomic requirements are characterized by compliance with the design of the dress to body size in statics and dynamics, compliance with sanitary and hygienic standards, ease of use;
- operational requirements are characterized by the degree of wear resistance of the product: resistance to light, water, friction and other loads and dimensional stability of its parts and edges; degree of ventilation, hygroscopicity of the product;
- social requirements for the dress are characterized by compliance with the size and growth range of consumer demand, competitiveness in domestic and global markets and compliance with the forecast of consumer demand⁸¹.

Economic requirements are also taken into account when designing a women's set. The skirt and blouse should be inexpensive to wear. Material costs should be as economical as possible. This can be achieved through optimal layouts, as well as the choice of rational width and length of the material, which reduces the amount of inter-waste.

Materials for the manufacture of women's clothing should be safe for human health and life. Should not be easily engaged, contain harmful substances.

Compliance with all these requirements allowed us to design and manufacture a quality women's set that will be in demand and meet the needs of consumers.

As it is well-known, the ready-to wear product corresponds to the designed form only when its design takes into account the properties of materials.

When creating new clothing collections, a review of modern and promising textile materials was conducted.

In recent years, new materials have begun to appear due to the widespread use of technological progress and innovation.

The most promising are innovations in the production of textile materials using nanotechnology and 3D printing.

In the production of textiles, nanotechnology is used in two directions: 1) the production of nanofibers, 2) the use of nanomaterials in the final finishing of traditional textile fibers and materials.

This allows the materials to be given properties such as water and oil resistance, reduced flammability, non-contamination, softness, antistatic and antimicrobial effects, heat resistance, shape resistance, etc. The state and prospects of nanotechnology development in garment materials are discussed in detail in the article⁸².

The search for alternatives to traditional textile and garment production has led to the creation of clothing on a 3D printer. This method has many advantages, including:

- lack of industrial waste (manufacturers of such clothing can calculate the amount of material they need for the end result);
- ease of disposal of used products (clothes created on a 3D printer can be broken down into particles that will be used to print a new product);
- customization of design (everyone has more access to develop their own things due to the rapid development and cost of household 3D printers, which in the future may lead to an increase in home production of clothing).

The most famous designer working in this direction is Iris van Herpen, who began experimenting with 3D printing technology in early 2010⁸³.

Formation of compositional, constructive and plastic solution of a new form of clothing in accordance with modern fashion trends. Every season, designers create new clothing lines that become real trends. However, some of them are constantly in the spotlight of designers and consumers. These include denim clothing, and accordingly, denim style of clothing, which is not affected by time, which remains a favorite and in demand for people of all ages.

Denim clothing is a very comfortable and practical thing that always stays in trend and maintains its leadership for more than a decade. This season's denim trend is not limited to classic

⁸¹ Yezhova, O. V. (2020). Clothing design. Course of lectures. Kyiv: Center for Educational Literature.

⁸² Yezhova, O. (2017). Prognosing development of textile nanotechnologies. *Vlakna a Textil*, 24 (4), 66-69.

⁸³ Herpen, I. (2022). The House of Iris Van Herpen.

dark denim items. In the collections of fashion brands you can see the full range of shades, finishes and styles of denim clothing.

Due to the pandemic and quarantine, many designers could not buy new fabrics for future collections, so it prompted them to use old stocks in warehouses, alter some models from past collections, giving them new life, and use remnants of various fabrics, creating patchwork patterns and thus supporting Zero Waste Production.

Among Ukrainian designers there are also such brands that support the idea of reusing fabrics. The most famous in this direction was the brand Ksenia Schnaider, which uses old jeans to create new models.

Based on the analysis, we can conclude that in the 2020-2021 season, denim items are presented in a variety of options. This led to the choice of the direction of designing a collection of women's clothing.

Also this season, despite the stable trend of minimalism, dresses, skirts and even blouses made of cascades of ruffles and frills, which are presented from thin prose materials – mesh, tulle, chiffon, organza, etc. are especially relevant.

This trend is especially noticeable in the latest collections: Valentino, SS 2021; Marchesa, PRE-FALL 2020; Giambattista Valli, SS 2021; Vera Wang, SS 2021; Alexander McQueen, SS 2021; Carolina Herrera, SS 2021.

The purpose of designing a collection is to create an artistic image of a person in a certain creative concept, which can be represented by a collage.

Collage is a technique in art, when pieces of different materials are glued to the surface.

The use of collage technique is widely used in the design of clothing collections. The collage reflects the requirements of potential consumers, current fashion trends and creative design ideas. It also gives some idea of the color scheme and texture of materials that will be used in the future to create a collection.

Based on a certain creative concept, a collage of the artistic image of the consumer was developed for the development of the collection (Fig. 1).

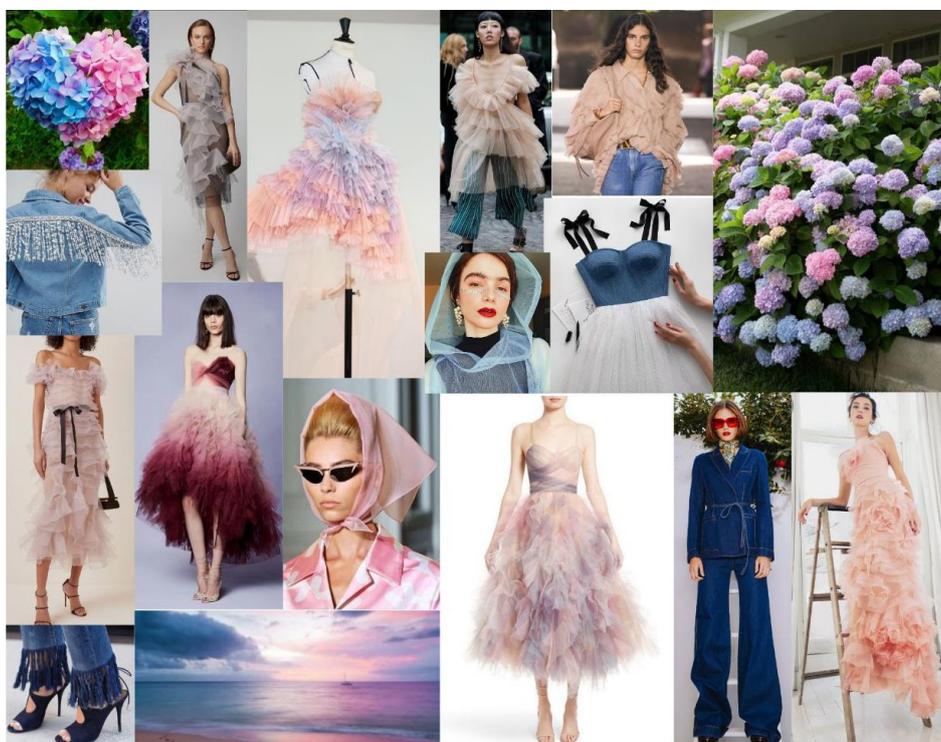


Fig. 1. Creative collage of the artistic image of the consumer for the development of the collection "Infiorescenza"

The second step after formulating a creative idea is to determine the prognostic model of the design object.

The urgency of fashion forecasting is caused by the needs of mass production: the need to plan production volumes, take into account the possibility of new fashion forms, learn new technologies, develop new designs.

The forecast model is a model that embodies the predicted changes and trends in costume design.

To create such a forecast model, it is necessary to conduct research based on forecast information, the source of which is fashion magazines, the latest shows of collections of famous designers, television, the Internet, and so on.

The first feature of today's fashionable silhouette, which is very similar or repeats the silhouette of past centuries – wide shoulders and sleeves, voluminous shoulder and waist products, elongated jackets with elongated sleeves. I can not fail to mention here the very fashionable for several years the length of copper in waist products. This applies not only to skirts, but also culottes, which are at the peak of their popularity.

The analysis identified the most fashionable silhouettes of the 2020s – it is straight and trapezoidal, as well as shapes – oval, rectangular, trapezoidal and their modern combination. As a result, a significant feature of modern silhouettes in contrast to the silhouettes of previous years was revealed – if the image consists of several things, they should usually all be straight, wide or extended and three-dimensional.

As for the range that is the most popular, apart from jeans, it is oversize T-shirts, culottes and midi skirts. That is, both now and in the future, the female half of humanity increasingly prefers clothes that are always comfortable and in which you can feel more confident.

As a result of research of the modern range of products and fabrics the model-forecast of the women's denim blouse oversize was formed.

Despite the high demand for jeans, there is a tendency to use transparent and light fabrics – soft mesh, organza, chiffon, tulle, etc. Products with cascades of frills and ruffles are gaining popularity. This has become very noticeable among the latest shows of collections of famous brands. Designers are experimenting with the range, because the fabrics used to make such finishing elements are very delicate and quite difficult to process. Nevertheless, on the catwalks or in lookbooks you can see not only tiered dresses, skirts and blouses, but also skinny, bomber jackets and more.

Also, designers have recently regained the popularity of the once very trendy technique – the use of the degrade effect in clothing models. In the fashion industry, degrade is the dyeing of fabrics with a smooth transition between different shades of colors. Designers use this effect not only in clothes, but also in shoes and accessories – bags, clutches, gloves, scarves, hats and more.

In the 2020-2021 season, degrade can be seen in the collections of Alexander McQueen, Christian Dior, Marchesa and J. Mendel.

Based on the research of modern trends in fashion, a model-forecast of a women's copper skirt made of soft mesh with the effect of degradation was formed.

In preparation for the design of the creative collection, a review of the latest shows of well-known brands, trends are tracked, interesting transformations of shapes, trendy combinations of colors and textures, fabrics and textures of materials and more. This provided the basis for further work on the collection.

After analyzing the trend silhouettes and shapes, it was decided to create a collection of voluminous clothing in the style of oversize with high ergonomics, aesthetics, functionality and technology.

To implement the idea requires such a fabric that the products were light and airy. A soft tulle is chosen for this purpose.

When creating creative collections, such tools are used as: graphics tablet, design and image processing programs, digitizer, plotter, etc.

A graphics tablet is a device for sketching a future collection. Its main advantage is that you can quickly change the colors or shades, texture or print of the fabric without changing the sketch completely. This saves a lot of time in the collection design process.

The compositional principles of identity and rhythm were used in the design of the collection. The identity in the collection was represented by the same silhouette of the two models. The principle of rhythm is applied in all models of the collection in the form of successive repetition (horizontal and vertical) of the frills.

The main methods of clothing design include: combinatorial, modular, methods of deconstruction, layout and heuristics.

In turn, the combinatorial method includes such modern trends as combinatorics, kinetics, transformation, the development of clothing from a whole piece of fabric and the development of dimensionless clothing.

Kinetics is a combinatorial method of design, the idea of which is to create the dynamics of shapes, structural elements, decor, fabric with a geometric pattern and more.

The method of combinatorics and kinetics was used in the design of this collection. Combinatorics is presented in the form of a rhythmic combination of ruffles on skirts, sleeves and on the back of a bomber jacket. The method of kinetics was embodied in the moving details of the ruffles on skirts and shirts, which create the effect of dynamics inside the collection, making it light and airy.

Hydrangea flowers were chosen as a creative source for designing the collection.

The transformation of a creative source is a process of transforming a source of inspiration into an image model that embodies the creative concept of the future collection.

The transformation process includes three stages: research, analytical and sketch. Research work is the process of studying a creative source through visual observation. Analytical – includes analysis and identification of characteristic features of the creative source, typical features: shape, silhouette, texture, color solutions of characteristic articulations, plastic transfer, etc.

As a result of the accumulation of information, analysis of the creative source, the emergence of the author's idea and the search for original ideas, the designer creates essays. This can be an image of the general shape of the object of the creative source, its individual details, its inherent texture or ornament, color scheme, etc.

Based on the study of the accumulated information about the object of creative source of inspiration, the designer embodies it in sketches.

There are three types of sketches: fore-sketches, creative (artistic) and working (technical). They all have different purposes, level of detail, level of technical skill, graphic manner of execution, the degree of reflection of the form, texture of the material and so on.

So, the source of inspiration for my collection was hydrangea inflorescences. With the help of all the above stages of transformation, hydrangea flowers were transformed into an image-associative model, and then from it into a fore-sketch, which became the basis for designing the future creative collection.

Creating author's collections is impossible without defining a creative idea – the main idea of the designer. The source for a creative idea is the transformation of the creative source.

The main idea in the design of this collection was to recreate the image of the hydrangea and the effect of color gradient in clothing models. This led to the birth of the idea to embody the technique of multi-layered transparent fabrics, the use of cascades of frills of different shades, their overlap, thus creating a gradient effect. In addition, the method of vertical sequential stitching of ruffles of different shades of light fabric was also used.

The creative idea of the collection also helped to determine the color scheme of the collection, as well as the main shades of colors. They became deep blue, sky blue, powdery and deep cherry.

To group and systematize thoughts and ideas create a tablet of ideas – a collage with which the designer forms and conveys the mood and image of the future collection, conveys its main idea or motto, expressing them through illustrations, photos, sketches, clippings from newspapers or magazines, scraps materials or fabrics, decorative elements, etc.

The idea tablet gives an idea of:

- style (classic, romantic, eclectic, etc.);
- creative idea (source of inspiration);

- color palette;
- features of materials, accessories, etc.

On the basis of the created tablet of ideas make quick sketches of models of the future collection – fore-sketches.

The next step after creating a collage and sketches is to determine the symbol-shape of the costume of the future collection.

To design various shapes and silhouettes use lines, which together represent the outline of the model. Each line carries its own image and emotional load, which affects the perception of form. The contour of the surface of the form is determined by changing the silhouette and structural lines.

Based on a detailed analysis of the source of inspiration, its properties and features, I came up with ideas for developing such silhouettes and shapes that would embody the elements of a creative source.

The combination of all shapes and volumes, lines of vertical and horizontal divisions, outlines and silhouette contours of the models create a common symbol-form of the collection.

The symbol-form represents the image of a figure with the contours of models of clothes on compositional and constructive belts put on it (Fig. 2).

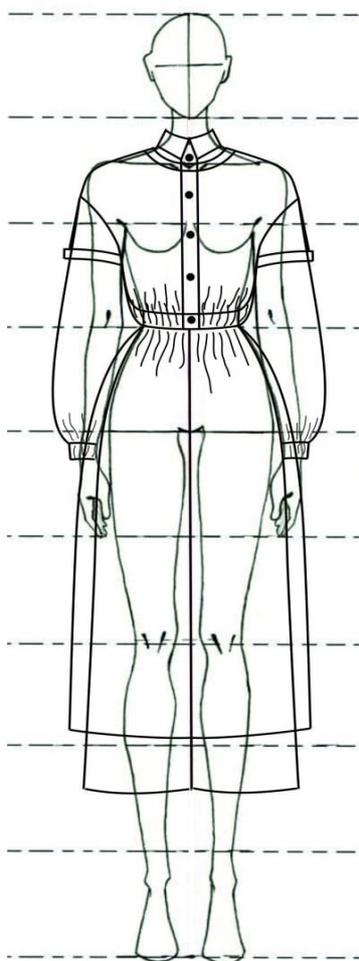


Fig. 2. Symbol-form of models of the collection "Infiorescenza"

All models of the collection have a three-dimensional shape with an emphasis on the waist. Also, the designed products are marked by a straight silhouette, except for culottes with an extended shape to the bottom. Tight-fitting belts create elastic belts sewn to skirts.

All shoulder products with a lowered shoulder line and a deep armhole, and waist – are presented in a fashionable length of copper.

As for the ratio and proportions, the created symbol-form shows that the volume of shoulder clothing is equal to the volume of the waist. This ensures the harmonious balance of each set of the designed collection.

One of the main stages in designing a clothing collection is the creation of creative sketches. At the same time, they must be created in the spirit of modernity, in line with modern fashion and its new trends. In addition, every designer should strive to create models and, accordingly, sketches that would be a new, fresh breath of fresh air, attracting viewers and future consumers. Such sketches and collections are able to be remembered by them and set the designer apart from others, making him famous and successful in his profession.

Creative sketches are usually created on the basis of fore-sketches as follows. From their list, the best are selected – the ones that, in the opinion of the designer, convey the most creative idea, the idea of the collection. They are improved and detailed. Very often in creative sketches for even better expression of image and creative idea, designers complement the model with various accessories – hats, scarves, scarves, jewelry, handbags, gloves, interesting designer shoes and more.

In creative sketches, the designer conveys the exact design of the shape, lines of articulation, cut sleeves, decorative details, close to reality color scheme, texture or pattern of the material. All this allows any viewer to clearly understand the creative author's idea, in contrast to fore-sketches, where you need to delve into the sketch and see in lines and spots what the designer wanted to convey.

Any random lines, individual strokes or spots, hints at the shape or silhouette of the model, characteristic of for-sketches, for creative sketches are not inherent and even unacceptable. Although the idea of the composition of the suit shape should be preserved. It is, in fact, a springboard between the author's creative idea and the future collection.

As for the silhouette, most models are dominated by wide voluminous clothes with an emphasized waist line. These are oversized items – T-shirts, shirts, bombers and jackets. They are harmoniously combined with such waist products as copper-length skirts, culottes and shorts with an extended silhouette.

At the expense of the cut of the sleeve, almost all models with sewn-on sleeves and an elongated shoulder line with a deepened armhole.

Trendy skirts of copper length turned out to be the most diverse in the sketches. All five units are completely different from each other. Some skirts are depicted with an elastic band on the belt, and some – with a regular belt and a zipper on the side. They also differ in cut: one in the form of an ordinary sun with a decorative detail of mesh sewn over the skirt, the other – also in the form of the sun, but with sharp corners at the bottom and combined with a decorative detail of mesh that looks from below the skirt. Another model is made purely of denim copper length. Its main feature is the relief on the front panel with a decorative strut, one edge of which hangs in the form of folds. The other two skirts use ruffles of different designs made of transparent mesh of different colors. Only in one model the frills are sewn horizontally, thus creating a cascade effect, and in the other – vertically, thanks to which a radically different result of the transfer of colors and shades as a result of their application.

Some models are complemented by handkerchiefs made of transparent mesh of different colors.

As a result of selection and improvement of fore-sketches, eight creative sketches were developed for the collection "Infiorescenza" (Fig. 3).

After defining the creative concept, analyzing fashion trends, conducting all stages of transformation of the creative source for the design of the collection, denim fabric was chosen in combination with different shades of soft tulle.

Denim is the most popular and practical material from which to create a wide range of things: pants, shorts, skirts, dresses, shirts, overalls, jackets, raincoats and even fur coats and swimwear. In addition to denim clothing, shoes (sneakers, sneakers, shoes, sandals, flip-flops, boots, etc.), hats (caps, hats, berets, stoles, etc.) and accessories (gloves, belts, bags, etc.) are also made. clutches,

hoops, etc.). All these things have become possible to make from denim fabric due to its excellent properties and characteristics.



Fig. 3. Creative sketches of the collection "Infiorescenza" (designer Klontsak Marta-Olga)

One of the most important advantages of jeans is their resistance to wear and strength due to the dense weave of fibers. Nevertheless, the material is hygroscopic, because it is made of cotton, which absorbs moisture very well. In addition, denim clothing protects against wind and heat.

Denim is known to be strong, so it can create the volume needed to sew oversize blouses and T-shirts, as well as the effect of "standing" bottom in culottes and jeans with an extended silhouette.

Among the wide range of denim fabrics for sewing T-shirts, raincoats and culottes, twill weave jeans with a density of 305 g/m², consisting of cotton (70%), polyester (28%) and elastane (2%) were chosen.

For the production of all products of the collection, only one shade of denim fabric has been chosen – classic blue, which will perfectly combine with all colors of nets.

A delicate light fabric, so-called "Armani silk", satin weave with a density of 90 g/sq.m, consisting of polyester (58%), viscose (40%) and elastane (2%) was chosen for the substrate. The fabric has many advantages and good characteristics: high enough strength and elasticity, medium breathability and moisture absorption, good wear resistance, increased durability and unpretentious care. In addition, Armani silk is not transparent, unlike chiffon, and is used for sewing dresses, blouses, skirts, pajamas, as well as for making stoles and capes and more.

To embody the creative idea, the main idea of the denim models of the collection will be complemented by decor or individual products from the Eurogrid. This material is one of the types of fatin and is a soft matte mesh with a fine weave in the form of diamonds.

Fatin mesh (Eurogrid) is a very light and soft material that can best convey the image of a hydrangea, to embody the effect of natural degradation of colors on the inflorescences. At the same time, due to the application of layers of different shades of Eurogrid, the products are not bulky and bulky. They become like air, creating the effect of kinetics – the movement of parts inside the product.

This material has many positive characteristics. A special feature is that the Eurogrid has a low density – 15 g/m². In addition, it is quite durable and practically does not wrinkle, has high wear resistance, does not get dirty and does not absorb moisture, and does not require special care and dries quickly after wetting.

To sew and decorate the products of the creative collection, a Eurogrid of five colors was chosen – beige, powder, blue, burgundy and purple.

Development of three-dimensional shape of the collection models. A clothing collection is a collection of clothing models created according to certain principles of designing collections and united by the author's creative concept.

Therefore, any collection can contain models of products of different assortment, type of clothing, silhouette, sleeve cut, design solution, etc. This means that the collection usually consists of elements of basic (immutable) and modification (variable) spaces.

The constituent elements of the base space formation are the ones that unite the models and are common in the collection. This can be the basic design, silhouette, proportions, length of products, colors, fabric or material, decorative elements, etc⁸⁴.

In the design of my collection, the main element of the base space is the common basic design of shoulder products for three models and belt products for two models. In addition, you can also highlight the three-dimensional silhouette of the models with an emphasis on the waist and the cut of the sleeves with a lowered shoulder line and a deep armhole. The collection includes products made of denim and mesh, so the color scheme and materials used are the same in each model.

The constituent elements of the modification space create diversity and make each model of the collection unique. This is due to changes in the length of the product and the configuration of the bottom line, the introduction of divisions, changes in the number of folds and their location, adding structural and decorative elements (yokes, collars, basques, straps, etc.) due to the use of technical modeling techniques. models, etc. It should also be noted that the use of accessories belongs to the modification space, as it helps to create different images and adds variety to the collection⁸⁵.

The elements of the modification space of the designed collection include the use of decorative elements in the form of frills of various shapes. In all models, they change their location: in one – horizontal, in the second – vertical, and in the third – chaotic. Also, the elements of variable space that distinguish the models in the collection include the length of products – skirts, culottes and sleeves in blouses. In addition, it is also worth noting the design of the neck in the models: in one – a turn-down collar with a detachable rack, in the other two – edging around the perimeter. As for the clasp, it is different in each product, and some products without it at all (for example, T-shirts) or replace it with an elastic band (for example, skirts). In culottes, a zipper on the side seam with a zipper, and in the blouse – on the front with sewn-on buttons.

Thus, by analyzing the models of the collection and describing the elements of the base and modification spaces, it is possible to logically justify the method of forming models.

Modeling is the application of methods and techniques for converting the plane of the fabric into the desired three-dimensional shape. With all the variety of ways of shaping clothing models usually distinguish the main ones:

- from a piece of fabric (without cutting and stitching);
- on the basis of a straight cut;
- on the basis of curvilinear cut;
- based on scans.

The design project of the creative collection uses a combination of two methods – based on straight and curved cut. There are no leaks in the models, as all products have a straight silhouette and three-dimensional shape. The fit at the waist is created by an elastic band. Almost all the details of the collection have straight side cuts, which is typical of a straight cut. All curved convex cuts (neck, armhole, okat, bow seam and seat seam) form a design based on a curved cut.

Compositional and constructive analysis of the designed model is a characteristic of the principles of formation of silhouette, constructive and decorative lines of the model. This analysis is performed according to the sketch, which shows the figure in frontal and profile projections with all structural belts. The main aspects of compositional and constructive analysis are the characteristics of the shape and design of the product by dimensions and increments, silhouette, cut, number of divisions, configuration of parts, their location, length of products, the presence of decorative elements and more.

The designed collection consists of four models, which are four sets:

⁸⁴ Malynska, A. M., Pashkevich, K. L., Smirnova, M. R., & Kolosnichenko, O. V. (2018). Development of clothing collections: textbook. Kyiv: Profi.

⁸⁵ Ibidem.

- model № 1 is a set of a blouse with short sleeves made of denim and a skirt with horizontal ruffles made of mesh;
- model № 2 is a set of a blouse with long sleeves made of denim and a skirt with vertical ruffles made of mesh;
- model № 3 is a set of a blouse with a turn-down collar and chaotically arranged ruffles made of mesh and culottes made of denim;
- model № 4 is a set of jacket with a turn-down collar with lapels and copper skirts made of denim.

For compositional and constructive analysis, sketches were made in frontal and profile projections with the image of all structural belts.

Since all models of the collection consist of sets, the compositional and constructive analysis is carried out separately for each product. For example, in Fig. 4 shows an image of the three-dimensional shape of the model № 1.



Fig. 4. Three-dimensional shape of the model № 1

The Red Café Automated Design System (CAD) is a special program for building, modeling and creating patterns, as well as exporting them to PDF format for printing on a printer or plotter.

In this system, the process of obtaining drawings of the structure can be carried out in three ways – self-construction or using patterns from the database "EMCO from Kochesova" or an automated construction algorithm⁸⁶.

An automated construction algorithm from Kochesova was used in the design of the products of the creative collection, according to certain dimensions and increments.

Before the construction of the basic structures and the stages of modeling, technical drawings and a description of the appearance of all models of the collection were performed.

The values of dimensional features of typical figures are selected from the tables of absolute values of dimensional features of OST17.326-81.

To automatically build the basic model, the values of dimensional features and increments are made.

⁸⁶ Zhukov, A. N. (2022). Redcafe.

After that, a drawing of the basic design of a women's blouse with a straight silhouette with a chest indentation from the shoulder line and a drawing of the basic design of a single-stitched sleeve were obtained.

This design has become the basis for all shoulder products of the creative collection. As for waist products, there are four of them – culottes and two skirts. As the skirts of a direct silhouette with an elastic band-elastic on a belt are designed, their basic design became a rectangle of 110x80 cm.

As a result of obtaining the basic structures, technical modeling was performed to obtain model structures of all products of the designed collection.

To obtain the final design of the details of the women's blouse model № 1 was performed modeling back, file and sleeve, which is described in the following steps:

- 1 – transfer of the slope of the thoracic indentation from the shoulder line in the armhole;
- 2 – determining the location of the length according to the sketch, namely ten centimeters below the waist line;
- 3 – widening and deepening of the neckline by two centimeters;
- 4 – elongation of the shoulder line according to the sketch by eight centimeters;
- 5 – transfer of the shoulder line on the file by one centimeter to create the appropriate balance and good fit;
- 6 – reducing the height of the occiput by ten centimeters by lengthening the shoulder line;
- 7 – determination of the length of the sleeve according to the sketch, which is twelve centimeters;
- 8 – narrowing at the bottom of the sleeve by three centimeters;
- 9 – completion at the bottom of the sleeve of the full-cut cuff two centimeters wide.

The scheme of modeling the details of the design of the women's blouse model № 1 is shown in Figure 5.

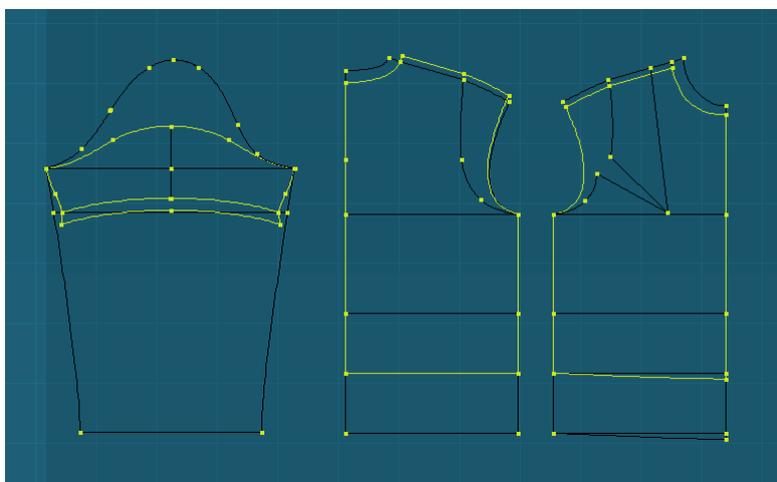


Fig. 5. Scheme of modeling the details of the women's blouse model № 1

Modeling of waist products of the creative collection took place in the following stages. According to the sketch, the skirt from model № 1 is decorated with horizontally sewn frills. As a result of technical modeling, five basic stitching lines with a step of eleven centimeters were drawn on the basic design of the skirt in the form of a rectangle (Fig. 6). After that, a drawing of the design of the steering wheel in the form of a square, in the center of which is designed a circle. Its length is equal to the width of the skirt. Straight lines of the steering wheel are built at a distance of 20 cm from the circle.

The structure of the designed collection is four sets:

- a set of blouses with short sleeves and skirts with horizontally placed frills;
- a set of blouses with a turn-down collar and chaotically arranged frills and culottes;
- a set of blouses with long sleeves and skirts with vertically arranged frills;
- a set of jacket with lapels and a skirt with a slit.

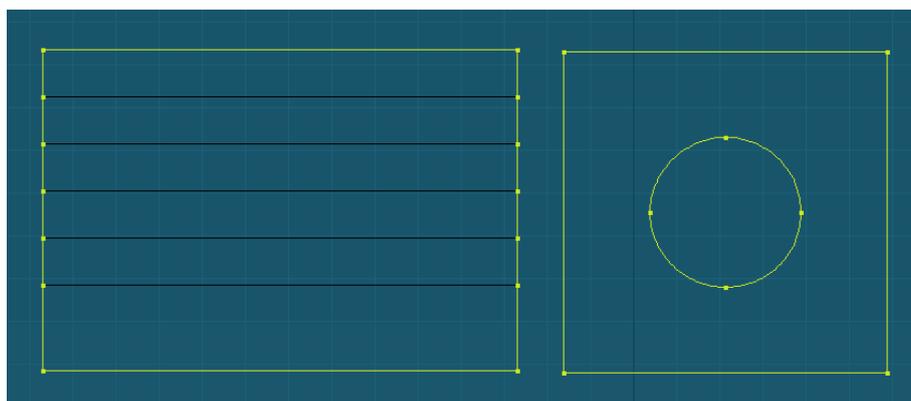


Fig. 6. The scheme of modeling the details of the women's skirt model № 1

The main feature of this image is that all the things in the kit can be disassembled and replaced without breaking its integrity.

The main material for the creative collection was a classic blue denim fabric and five shades of soft fatin mesh – beige, powder, blue, burgundy and purple. From denim there are two blouses with short and long sleeves, a skirt, culottes and a jacket, from a net – two skirts with horizontal and vertical arrangement of frills and a blouse with their chaotic arrangement.

All denim items without lining and with swept cuts, except for the jacket. He and the mesh skirts have a synthetic blue silk lining. All ruffles are also without swept cuts, because they are made of material that does not crumble.

Each model is presented with shoes in the form of white sneakers or running shoes, which adds a touch of sporty style and comfort to the overall image of the collection.

As for hats, all models are complemented by handkerchiefs in a grid of different colors, which provide a collection of modern sound and charm. At the same time, hairstyles for the embodiment of a creative image should be very simple and fashionable at the same time. For models with long hair it can be a low careless or smooth bundle, for short hair careless styling or perming in the form of half-loose curls, etc. will be suitable.

As you can see in the photo (Fig. 7), the script of the creative collection "Infiorescenza" presents four sets of clothes with the author's combination of denim and tulle, which is multilayered and voluminous, reminiscent of hydrangea inflorescences and reproduction of its natural color gradient.



Fig. 7. Creative collection of women's clothing "Infiorescenza" (designer Klontsak Marta-Olga)

Then work was carried out on the creation and design of patterns of one model, the choice of allowances, the designation of overcuts for the conjugation of parts, the main structural lines (Fig. 8).

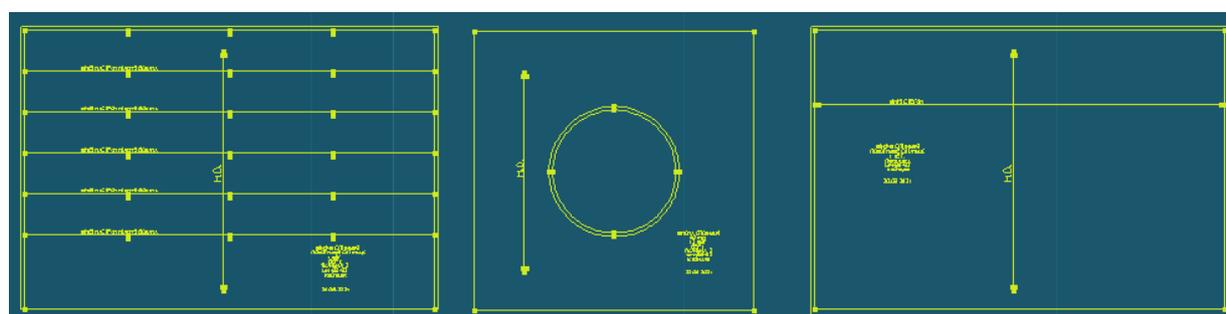
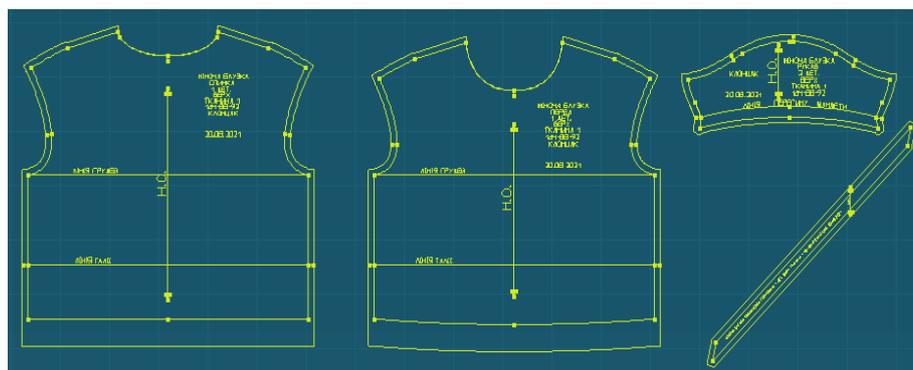


Fig. 8. Design of patterns for women's blouses and skirts model № 1

In mass production of clothing, the primary design of the details of the model, which is called the original, is created only for one average size and height in the size and full group for which this model is recommended. Patterns of parts of other sizes and heights are obtained by proportionally reducing or increasing the linear dimensions of medium-sized patterns. The process of designing a set of patterns of garments of different sizes and heights based on patterns of basic size is called gradation patterns.

Gradation is performed separately by size and height, not performed by complete groups.

Gradation of patterns significantly simplifies and speeds up the process of creating patterns of other sizes and heights. However, there is a danger of distortion of structures of extreme size and as a result of deteriorating quality of planting products on the figure⁸⁷.

Changing the size of garments is related to changing the dimensional features of the figures of a typical physique. Therefore, the rules for determining the size of clothing items during gradation are based on the laws of change of subordinate dimensional features of the body depending on the change of the leading dimensional features. At gradation of patterns of details of clothes on the sizes (at constant growth) the linear sizes of details change both lengthwise, and across. As a result, the structural points move along the diagonals of the rectangle, the sides of which are determined by the values of increments along and across. At gradation of patterns on growths (at the constant size) some linear sizes change only along, neglecting cross increments owing to their small size.

The following grading systems adhere to the following principles:

- use of uniform rules for gradation of patterns;
- single location of baselines for gradation;
- constancy of the values of displacements of structural points relative to the base size for each selected subgroup of dimensions.

There are several ways to gradation patterns: radial, proportional-calculated, grouping.

⁸⁷ Yezhova, O. V. (2020). Clothing design. Course of lectures. Kyiv: Center for Educational Literature.

The essence of the beam method is that from a certain point (center) through the structural points of the parts conduct rays. From the contour of the details along these rays set the magnitude of the increments. The beam method is used for gradation of patterns of individual parts of hats and corsets.

The most widespread was the proportional-calculation method. Incremental values are calculated based on changes in subordinate dimensional features. The displacement of the points is determined by the prepared tables relative to the gradation lines (which often coincide with the direction of the warp and weft threads).

The method of grouping involves combining two sets of patterns (medium and adjacent or medium and extreme sizes). The structural points of the same name on the combined patterns are connected by straight lines and divided into the number of parts corresponding to the number of intermediate dimensions. Patterns of other sizes are obtained by placing new points on the connecting lines at a certain distance from the contour points of the base size. This method is used in cases where the designer does not have a proven gradation scheme (for example, when reproducing patterns of complex styles with draping, or to determine the position of intermediate points, control marks, etc.).

Modern CAD clothing allows you to automate most of the procedures for developing a new model: sketching, designing, modeling, compiling design, technological and economic documents. And although information technology is used at all stages of the production cycle of the garment enterprise, the basic module of CAD systems is considered to be subsystems of clothing design and modeling⁸⁸.

CAD (Computer Aided Design) – computer-aided design system – a software package designed to create drawings, design and partial technological documentation.

The theoretical basis of automation of clothing design is built on the principle of typical design. Each model consists of individual structural elements, some of which become typical and are included in the catalog of standard design solutions. The catalog of model elements of the structure includes information about the details that give variety to the models.

CAM (Computer-aided manufacturing) – a system of automated planning, management, manufacture and control of production operations. In mechanical engineering, SAM systems are used at all stages of production – from the technological component of the project to manufacturing on machines with numerical program control. In the garment industry, the use of automated sewing lines is still limited. Therefore, CAM-clothing systems are often understood as programs for technological preparation of production.

CAE (Computer-aided engineering) – programs for engineering calculations of both the product design and assessment of its performance, reliability, modeling of real operating conditions.

PDM (Product Data Management) – a system module that manages the storage, movement of information, provides access to users and more. The modern project consists of a large amount of source data, calculations, drawings and other files. Therefore, PDM is an important part of modern clothing design systems.

Most modern clothing CAD solves a number of design preparation problems, for which the corresponding software modules are provided. These are the following tasks:

- construction of basic clothing designs according to the user's own methods or own methods;
- introduction of ready basic designs created in the traditional way (manually on paper), or in other program;
- inspection of structures for conjugation of sections in length and shape;
- technical modeling;
- addition of technological allowances, taking into account the peculiarities of processing in the corners;

⁸⁸ Yezhova, O. V. (2015). Information technology in the creation of garments. Kirovohrad: FOP Aleksandrova.

- gradation of patterns by size and height;
- layout of patterns in manual and automatic modes;
- formation of text design documents, in particular the report card and specifications of cut details and patterns.

The modular principle of construction allows you to choose the configuration of CAD required by a particular company.

CAD subsystems may contain one or more of the above modules, or adapted to special materials subsystems.

Conclusions. As a result of the analysis of scientific sources it is established that the scientifically substantiated scheme of design preparation of production of the fashion industry is the five-stage scheme on the basis of standards of the Unified system of design documentation: 1) technical task; 2) technical proposal; 3) sketch project; 4) technical project; 5) working documentation. However, in practice, there are usually no clear boundaries between the individual stages of the clothing design process due to their interconnectedness and the creative nature of the design work.

The directions of development of 3D clothing design are characterized: 1) creation of 3D-sketches for visualization; 2) development of scans of garments based on 3D data; 3) 3D printing of clothing or its parts.

The process of creating a creative collection is substantiated and implemented on the example, the main stages of which were: research of consumer type, determination of consumer requirements for clothes, analysis of fashion trends and latest materials, development of creative concept, selection and transformation of creative source into image model-sketches and creative sketches, selection and justification of materials for the collection, development of drawings of basic structures, modeling, production of patterns and all models in the material.

The basic principles and methods of gradation of patterns of details of clothes on the sizes and heights are considered.

Possibilities of modern systems of automated design of clothes are analyzed.

References

1. Agnè, L. A. G. È., Ancutienè, K., Pukienè, R., Lapkovska, E., & Dāboliņa, I. (2020). Comparative Study of Real and Virtual Garments Appearance and Distance Ease. *Materials Science*, 26 (2), 233-239. doi:10.5755/j01.ms.26.2.22162.
2. Agoshkov, L. A. (1987). *Designing clothes with rational assortment series*. Kiev: KTILP.
3. An, H., & Park, M. (2020). Approaching fashion design trend applications using text mining and semantic network analysis. *Fashion and Textiles*, 7 (1), 1-15. doi:10.1186/s40691-020-00221-w.
4. Chan, I., Au, J., Ho, C., & Lam, J. (2020). Creation of 3D printed fashion prototype with multi-coloured texture: a practice-based approach. *International Journal of Fashion Design, Technology and Education*. doi:10.1080/17543266.2020.1861342.
5. DSTU 3321:2003. *Design documentation system. Terms and definitions of basic concepts*.
6. Herpen, I. (2022). *The House of Iris Van Herpen*. URL: <https://www.irisvanherpen.com/about/the-maison>.
7. Hwang Shin, S. J., & Lee, H. (2020). The use of 3D virtual fitting technology: comparison between sourcing agents contractors and domestic suppliers in the apparel industry. *International Journal of Fashion Design, Technology and Education*, 13 (3), 300-307. doi:10.1080/17543266.2020.1797905.
8. Kang, M., & Kim, S. (2019). Fabrication of 3D printed garments using flat patterns and motifs. *International journal of clothing science and technology*, 31 (5), 653-662. doi:10.1108/IJCST-02-2019-0019.
9. Kolosnichenko, M. V., Protsyk, K. L. (2011). *Fashion and clothing. Fundamentals of clothing design and production*. Kyiv: KNUVD.

10. Kuleshova, S., Zakharkevich, O., Koshevko, J., & Ditkovska, O. (2017). Development of expert system based on Kansei engineering to support clothing design process. *Vlakna a Textil*, 24 (3), 30-41.
11. Malynska, A. M., Pashkevich, K. L., Smirnova, M. R., & Kolosnichenko, O. V. (2018). *Development of clothing collections: textbook*. Kyiv: Profi.
12. Pashkevich, K., Kolosnichenko, M., Kolosnichenko, O., Ostapenko, N., & Yezhova, O. (2018). Study of properties of overcoating fabrics during design of women's clothes in different forms. *Tekstilec*, 61 (4), 224-234. DOI: 10.14502/Tekstilec2018.61.2
13. Pashkevich, K., Yezhova, O., Kolosnichenko, M., Ostapenko, N., & Kolosnichenko, E. (2018). Designing of the complex forms of women's clothing, considering the former properties of the materials. *Man-make Textiles in India*, 46 (11), 372-380.
14. Smelik, A. (2020). Fractal Folds: The Posthuman Fashion of Iris van Herpen. *Fashion Theory – the journal of dress body & culture*. doi:10.1080/1362704X.2020.1850035.
15. Sushan, A. T. (2007). *Engineering design of garments*. Kyiv: Aristei.
16. Yezhova, O. & Pashkevich, K. (2021). Constructing virtual mannequins with different postures for purposes of 3D designing of the clothes. *Songklanakarin journal of science and technology (SJST)*. 43 (2), 392-397. doi: 10.14456/sjst-psu.2021.51.
17. Yezhova, O. & Pashkevich, K. (2021). Constructing virtual mannequins with different postures for purposes of 3D designing of the clothes. *Songklanakarin journal of science and technology (SJST)*. 43 (2), 392-397. doi: 10.14456/sjst-psu.2021.51.
18. Yezhova, O. (2017). Prognosing development of textile nanotechnologies. *Vlakna a Textil*, 24 (4), 66-69.
19. Yezhova, O. V. (2015). *Information technology in the creation of garments*. Kirovohrad: FOP Aleksandrova.
20. Yezhova, O. V. (2020). *Clothing design. Course of lectures*. Kyiv: Center for Educational Literature.
21. Zakharkevich, O. V. (2018). *Development of Scientific Fundamentals to Ensure the Flexibility of Clothing Design using Expert Systems*. Doctor of Technical Science theses. Kherson: Kherson national technical university.
22. Zhu, G., & Song, W. (2020). Patterns simulation in the 3D virtual stitching and try-on system. *International journal of clothing science and technology*. doi:10.1108/IJCST-09-2019-0145.
23. Zhukov, A. N. (2022). *Redcafe*. URL: <https://redcafestore.com/>.

ANNOTATION

Olha Kovalova. PECULIARITIES OF THE REFORM OF STATE SUPPORT FOR CHILDREN WITH DISABILITIES IN UKRAINE

The paper analyzes the provision of state support for children with disabilities in the context of social reforms in Ukraine and identifies priority areas for improving the management of this process in modern conditions. The author considers the typology of children with disabilities, reveals the legal and organizational principles of their state support, models of their rehabilitation in Ukraine. Measures of effective realization of the state support of children with disabilities are investigated and on the basis of studying of foreign experience ways of modernization of forms of the state support of children with disabilities in Ukraine are offered.

Hanna Varina. PSYCHOLOGICAL DETERMINANTS OF DEVELOPMENT OF EMOTIONAL CULTURE OF FUTURE MASTERS OF PSYCHOLOGY

The scientific publication is aimed at expanding and deepening knowledge about the psychological features of the development of emotional culture of the future master of psychology. The article analyzes the empirical data on determining the level of assessment of the emotional state of applicants; identification of psychological factors that contribute to the development of emotional culture of the future master of psychology. Theoretical analysis of socio-psychological features of human emotions, components, criteria, indicators and levels of development of emotional culture of the individual. In the context of theoretical analysis of the problem of emotional culture of future masters of psychology defined emotional culture as a system of skills of the subject's own emotional intelligence for emotional self-regulation, manifested in reflective awareness of emotions (both own and others), recognition of their value and motivation strength, as well as the purposeful use of emotions in various types of internal mental and external (subject and social) activities. The ascertaining research revealed the dominance of medium and low level of development of structural components of emotional culture and general level of emotional intelligence of higher education seekers. Based on the obtained statistically significant data, a development program was developed.

Olga Yezhova. THEORY AND PRACTICE OF DESIGN PREPARATION OF FASHION PRODUCTION USING COMPUTER TOOLS

The process of creating a creative collection is substantiated and implemented on the example, the main stages of which were: research of consumer type, determination of consumer requirements for clothes, analysis of fashion trends and latest materials, development of creative concept, selection and transformation of creative source into image model fore-sketches and creative sketches, selection and justification of materials for the collection, development of drawings of basic structures, modeling, production of patterns and all models in the material. The directions of development of computer 3D clothing design are characterized. The basic principles and methods of gradation of patterns of details of clothes on the sizes and heights are considered.

Possibilities of modern systems of automated design of clothes are analyzed.

Stanislav Dushkin. INCREASING THE EFFICIENCY OF HORIZONTAL SEPARATORS WITH THIN-LAYER MODULES

The work is devoted to the problem of drinking water preparation in horizontal sedimentation with thin-layer elements, the use of which makes it possible to improve the quality of clarified water and increase the productivity of water treatment plants.

Iryna Yemchenko. RASFF – QUICK ALERT SYSTEM AS A MEANS OF CONSUMER PROTECTION

The article provides definitions of «food», «safety», «safe food». The importance of harmonization of Ukrainian legislation in accordance with EU requirements in the field of food safety is shown. The stages of introduction of the European model of the food safety guarantee system based on HACCP procedures in Ukraine are presented.

The role of RASFF – the European Union's rapid alert system for food products is highlighted. The dynamics of reports of foods that are or may be dangerous to human health are shown. Categories and types of messages and features of message formation in the RASFF system are analyzed. The ways of taking appropriate measures by state bodies to inform the public about the dangers of food products have been identified. Examples of categories and types of messages from EU member states of the RASFF system are given. Requirements for traceability of commodity consignments and functions of the country-informant about notifications are given. Peculiarities of legislative regulation of the quality and safety of food products of Ukraine are analyzed.

Iryna Malynina. METHODS AND A CONCEPT OF DESIGN WITHIN THE TRAINING COURSE "METHODOLOGY OF DESIGN" SPECIALTY – MULTIMEDIA DESIGN

By describing a specific work practice the author of the article wanted to show her experience useful for other design teachers. We provide the reader with the opportunity to develop their own practice based on our experience.

The requirements of our time constantly challenge designers to find new solutions when generating ideas. During the learning process, students have a problem with the choice of methods and the transformation of the idea into design concepts. Experience shows that not every student can present their idea in the form of a design concept. Moreover, many equate an idea with a design concept. The article discusses the main methods used in design, as well as the stages of the design concept formation.

Svitlana Inozemtseva. FORMATION OF THE PROFESSIONAL COMPETENCE OF FUTURE WEB DESIGNERS IN THE PROCESS OF STUDYING "TECHNOLOGIES OF WEBSITE DEVELOPMENT" DISCIPLINE

This paper examines the problems of forming the professional competence of future web designers. The scientific literature on the chosen topic is analyzed. The concept of "professional competence" in general and "professional competence of a web designer" in particular is substantiated. The factors influencing its formation are revealed. The discipline "Technologies of Website Development" and its role in the design-education system are analyzed. The peculiarities and perspectives of this discipline as the primary means of forming the professional competence of a web designer are determined. The main conclusions and prospects of research in this direction are formulated.

Natalia Svitlychna. FEATURES OF PSYCHOLOGICAL HEALTH OF FIRE AND RESCUE AND MEANS OF ITS STRENGTHENING

The article addresses the essence and structure of process of mental health maintenance of the SESU staff. It is shown that long-term professional activity of rescuers leads to negative changes in their mental health. They become more suspicious and uncompromising, more dependent on alcohol, food and computer; have low levels of well-being, activity and a high level of neuroticism. Psychocorrectional complex of optimization of rescuers' mental health is developed. It consists of three interconnected and complementary semantic blocks: the development of rescuers' positive thinking, ideomotor training for the Prmation of readiness for action in extreme

conditions and therapeutic crisis intervention with elements of art therapy. After correction the anger, sensibility, incomppliance, inflexibility and vindictiveness, open cruelty, level of neuroticism of all participants were significantly decreased. These results indicate the effectiveness of the programmed psychological correction program to preserve the mental health of the SESU staff.

Iryna Bulakh. MORAL ORIGINS OF PERSONAL GROWTH DURING ADOLESCENCE

The article presents a verbal model of personal growth of adolescents. Emphasis is placed on the moral origins of the genesis of moral self-awareness as the basis for the development of personality in adulthood. The essence and genesis of the phenomenal field of moral self-consciousness of the adolescent personality are covered. The process of formation of the main forms of moral growth of adolescents, including feelings of shame, guilt, conscience and responsibility, is analyzed. It is emphasized that there is a close relationship between the semantic field of the constructs "personal growth" and "moral growth". It is proved that the moral origins of personal growth of adolescents are in the axiological dimension and are relevant as an unconditional value attitude to others.

Valentyna Voloshyna. AXIOLOGICAL PARADIGM OF PROFESSIONAL TRAINING OF FUTURE PSYCHOLOGISTS

The article presents the results of theoretical and empirical research on the formation of the integral of the professional value of future psychologists on the basis of the axiological paradigm. The essential content of the axiological paradigm in the educational process is outlined. The model of psychological technologies and the necessity of its introduction are substantiated. The axiological essence of the integral of professional value as a result of psychological training of the future specialist is revealed. The results of empirical study of the formation of the integral of the professional value of the future psychologist are described. The dynamics of integration of personal, professional and social axiospheres as components of the integral of professional value of future psychologists is traced.

Yuliia Ilina. MANIFESTATION OF STRONG-WILLED PERSONALITY TRAITS DUE TO THE PROPERTIES OF THE NERVOUS SYSTEM IN SPECIALISTS OF RISKY PROFESSIONS AND THEIR RELATIONSHIP WITH MOTIVATION

The research is devoted to deepen development of the problems of will and orientation of specialists of risky professions. Behavioral activity of a personality is conditioned by both physiological and psychological components. Individuals who want to master an extreme profession have to develop definite psycho-physiological qualities, which cannot be ignored when they choose their future profession. Properties of the nervous system (strength / weakness) and their relationship with volitional qualities and motivational component in rescuers were studied. It was found that the students who studied have higher level of development of volitional qualities, initiative, independence and motivational component is in representatives with a strong nervous system than with a weak one. The developed psycho-correctional program and the conducted training have promoted to increase of studied parameters.

Tetiana Katkova. TOLERANCE IN THE STRUCTURE OF SOFT SKILLS OF THE MODERN TEACHER

The research is devoted to the study of the psychological content of pedagogical tolerance as a professionally important quality of a secondary school teacher. A necessary condition for the success of pedagogical activities is the acceptance of the child as he is, the acceptance of the otherness of the interaction partner. Tolerant teacher, thanks to special tactics of construction of the behavior concerning children, achieves greater efficiency. In the modern school, the role of the teacher's personality is growing significantly. The problems facing the modern school – the complication of interethnic relations, the stratification of the population of "rich and poor", intolerance of people of other faiths and others – explain the practical interest in research in the field of tolerance. In psychology there is no clear answer to the psychological content of pedagogical tolerance, no individual psychological factors of pedagogical tolerance, cognitive component of pedagogical tolerance, which necessitates analysis of the problem of pedagogical tolerance as a professionally important quality of the teacher.

Liliia Kobylnik. PSYCHOLOGICAL FEATURES OF SELF-ACTUALIZATION OF PERSONALITY IN PROFESSIONS OF DIFFERENT LEVELS OF SOCIAL PRESTIGE

The paper analyzes the conceptual provisions and theoretical and methodological approaches to the phenomenon of self-actualization among representatives of professions of different levels of social prestige in the works of foreign and domestic psychologists and modern researchers; the indicators of self-actualization of representatives of a non-prestigious profession – an educator and representatives of a prestigious profession – a manager were experimentally studied.

It has been experimentally established that the representatives of the prestigious profession of manager are superior to the educators engaged in non-prestigious activities in the predominant number of manifestations of self-actualization. The impossibility of self-actualization in professional activities, educators can compensate for the satisfaction of the work process through good relations with colleagues; in the group of managers, professionals, on the contrary, are more willing to sacrifice warm relationships with others for the sake of work that increases their social status.

Artem Korkishko. PEDAGOGICAL CONDITIONS AND WAYS OF FORMATION OF PROFESSIONAL IMAGE OF MASTERS OF PEDAGOGY OF HIGHER SCHOOL IN THE EDUCATIONAL ENVIRONMENT OF THE UNIVERSITY

The article characterizes the pedagogical conditions and ways necessary for the formation of the professional image of masters of pedagogy of higher education. Based on the generalization of numerous approaches, the definition of the concept of "pedagogical conditions" is formulated and understood as the peculiarities of the organization of the educational process in an institution of higher education, as a set of objective possibilities, content, forms, methods, pedagogical techniques and material-spatial environment that contribute to the successful formation of the professional image of masters of pedagogy of higher school. The pedagogical conditions that contribute to the effectiveness of the formation of the professional image of masters of pedagogy of higher school are theoretically substantiated: ensuring the motivation of masters of pedagogy of higher school to form a professional image through filling the content of education with special image-oriented knowledge; diversity of the process of professional training of masters of pedagogy of higher school through interactive forms and methods of teaching and educational activities; activation of the value, cognitive and behavioral components of the activities of lecturers concerning the formation of the professional image of masters of pedagogy of higher school.

Irina Koriakina. DEVELOPMENT OF SENIOR PRESCHOOL CHILDREN'S CREATIVE ABILITIES WITH LEGO-TECHNOLOGIES

The experimental research is devoted to a topical pedagogical problem, and the proposed system of work on the development of senior preschool children's creative abilities with the LEGO-technologies can be successfully used in the practice of preschool education. The development of a creatively active person is an important task today. The process of creative person development begins in preschool age. The results of theoretical research and educational practice show insufficient study of issues related to the development of preschool children's creative abilities with the help of LEGO-technologies. The priority areas of the preschool institution's work on the development of the child's creative abilities are the creation of appropriate conditions for the developmental environment, the timely disclosure of natural inclinations and abilities of the child. Designing is one of the main productive activities, as it is a process of solving certain creative tasks, and LEGO technology is one of the most famous educational systems for preschool children.

Svetlana Melnikova. PSYCHOLOGICAL FEATURES OF MODERN GIRLS AS A PREDICT OF FUTURE FAMILY CONFLICTS

This the study studies the psychological characteristics of modern girls as a predictor of future family conflicts, empirically researched and analyzed role expectations and attraction to marriage, personality type in conflict situations, the level of aggression in modern girls as a marker of their attitude to family, future husband, readiness for marriage and prevention family conflicts. It has been found that modern girls have no idea about the gender-role behavior of women in marriage, do not prepare for marriage and economic responsibilities, and find it difficult to find common ground with other people. The results of the study showed that the leading types of behavior of modern girls in conflict situations are adaptation and compromise, which indicates the desire of girls to avoid direct conflict. It is revealed that this problem is researched and widespread, many aspects of this issue are considered, and yet the realities of modern life spread this problem. Therefore, the scope for studying this problem is very wide, as family conflicts affect all aspects of social and personal life, from the relationship between a man and a woman, and ending with issues such as divorce, including in families with minor children. The program of ability to settle family conflicts is created.

Yevhen Plisko. TECHNOLOGIES OF SOCIAL WORK AND EDUCATION OF JUVENILE OFFENDERS IN UKRAINE

The study reveals the basic theoretical principles, principles and technologies of the modern system of social education of juvenile offenders in Ukraine. Gradually revealed the stages of socio-pedagogical work: prevention, rehabilitation, resocialization, patronage. The complexes of organizational and practical measures aimed at working with minors in a healthy society, boarding schools, penitentiary institutions and after his release are analyzed. The results of scientific research will be useful to social workers, psychologists, educators whose professional activities are related to the organization of correction of illegal behavior of children and adolescents.

Yevheniia Skvorchevska. GADGET ADDICTION AS A PSYCHOLOGICAL PROBLEM

The article analyzes the problem of the features of gadget addiction as a psychological problem of modern society. Today, dependence on a mobile phone, the Internet, and gambling are rapidly spreading. Parents do not understand the negative impact of the gadget on the mental and physical state of the child, so they do not prohibit virtual communication and online games. The study of gadget addiction among younger schoolchildren of the experimental group revealed a high level of involvement in computer games, so that computer games take up all their free time and make up the meaning of life. A high level of propensity for computer addiction prevails. After the correctional program, younger students changed their attitude to games, reduced the amount of time spent online, and began to pay attention to hobbies and friends.

Natalia Khlus. HEALTHY LIFESTYLE FORMATION IN SENIOR PRESCHOOLERS BY MEANS OF PHYSICAL CULTURE AND RECREATION ACTIVIT

The experimental study characterizes the theoretical foundations of the issue of healthy lifestyle formation in senior preschoolers. The scientific study analyzes the issues of health, physical education and age characteristics of senior preschoolers. In the practical part of the experimental study, a program about a healthy lifestyle formation by means of physical culture and recreation activity in senior preschoolers was presented. The program was implemented through lessons, regime moments, outdoor and sports games, walking, individual work and independent activity of children. Individual conversations with children and questionnaires of parents showed that as a result of the introduction of an experimental program of healthy lifestyle formation in children, the level of knowledge about a healthy lifestyle significantly has increased and the attitude to their own health and the health of others has changed.

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