

THE USE OF MODERN ECO-FRIENDLY DESIGN TRENDS IN THE DEVELOPMENT OF A CAPSULE COLLECTION OF CASUAL CLOTHES FOR CHILDREN

Tetiana McAlister, Kalina Pashkevich
Kyiv National University of Technologies and Design
Kyiv, Ukraine
mcalistertatiana@gmail.com

Abstract. Light industry pollution is the urgent problem of our ecological planet situation. The annually percent of the clothes bought by people increased by 40% for the last decade with increasing using the internet and appearing the term of "fast fashion". The global fashion brands develop eco-friendly ways of optimising clothes production by recycling materials and using fabrics of new generation. The new conscious approach to clothes is developing among the producers and the customers. Thus the most important criteria for brands is to optimise the production, to use ecologically friendly fabrics and creating "smart" clothes that remains usable for a long time.

Key words: children clothes, eco-friendly production, inter-dimensional adaptation, capsule collection, casual clothes.

The problem of environmental pollution in the modern world is very acute. According to statistics, the light industry is the second in the list of the most harmful industries in the world – ahead of only the oil industry. Light industry not only pollutes the environment, but also uses the resources of our planet in an irrationally high volume. It became one of the most main social and economic problems to be discussed on international level nowadays. Thus, according to the statistics of industrial waste from the fashion industry, the production of 1 kg of cotton, which is the equivalent of one t-shirt or jeans made of cotton, requires 20,000 liters of water. The share of light industry in the world's water consumption is 20% [1].

The environmental pollution process is also a consequence of such a phenomenon as "fast fashion", which has gained a high volume over the last decade due to the

rapid change of seasonal trends and a complete update of the range of products in mass-market every season. However, the greatest impact on the "fast fashion" is due to the use of the Internet, namely the online stores and social networks that contributed to the ability to shop online and to be aware of all fashion trends [2]. According to statistics of the European Parliament, the number of clothes purchased per person increased by 40% between 1996 and 2012. At the same time, 30% of clothes in the wardrobes of Europeans are stored unused for at least a year. More than half of the discarded clothes are not recycled or sorted, but mixed with household waste and subsequently burned in furnaces or taken to landfills [3].

The work *objective* is to develop a conceptual everyday capsule children collection of eco-friendly clothes for girls of 11.5-15.5 years old. The basic approach to product development is to use the transformation of clothes items, thus making the clothes more functional and versatile for a wide range of children. In addition, the goal is an innovative approach to the design of clothes and eco-friendly production: eco-friendly materials, minimal of waste, recycling of fabrics. To achieve this goal, the criteria of eco-friendly production were defined; the basic functional features of the clothes design were selected based on the market research and surveys of the target audience; the compliance of the clothes design to the ergonomic and operational criteria of the selected age category of children was analyzed; the basic criteria of capsule collection of functional casual clothes in the collections of modern designers were analyzed. The existing constructions of the clothes of modern brands were analyzed by visual-analytic method and by questionnaire of the target audience.

The scientific novelty and practical value of the project results obtained is the creation of clothes with unique functional designs that can be modified according to the physiological changes of a child. These are functional design elements that allow changing the size and appearance of clothes. Also, the scientific novelty of the collection includes the use of a new generation fabrics. The practical value includes designing the clothes in a way that allows changing the size of clothes and thus makes the clothes universal for different age categories. In addition, the practical value of the work includes providing the method of clothes creation by a single scissors cut of the main parts with the lowest possible waste, thus influencing the optimisation of ecological production.

Market analysis and a survey of the target audience showed that the most important criterion of casual clothes is comfort and functionality adapted to the

rhythm of modern life of young people. The analysis was made on the most popular global brands of clothes for teenagers represented in Ukraine such as Stradivarius, Forever 21, Adidas, Bershka, H&M teenage, House, New Yorker and others. Also the “street-style” fashion was analysed, which is an indicator of real preferences and bestsellers among young people. The visual-analytical method and statistical data analysis of the Internet shops allowed defining the most used elements of clothes, preferred stylistics and the most important functional features.

The main characteristics of the most daily used clothes for teenagers include: high waist and loose silhouette; emphasis on the shoulders – which is a reference to the fashion of the 1980s; sweatshirts and models created on its basis – hoodies, bombers, jackets. Outerwear is characterized by oversize or baggy fit, that suit well for inter-dimensional adaptation. This research allowed selecting the main dimensional features for the basic design and constructive ways of adapting clothes for a certain size. The research of the materials used for clothes manufacturing by the globally recognized brands showed that clothes manufacturing enterprises tend to move towards eco-friendly materials and to use the new generation fabrics such as lyocell and, partially, the fabrics manufactured of recycled plastic and paper. Based on this research, it was decided to use the recyclable fabrics and ecologically created fabrics.

Summary. The conducted researches allowed to select the most commonly used elements of the capsule collection for teenagers and to define the basic functional techniques ensuring the dimensional adaptation of clothes to several sizes. The main ways of creating a collection were considered taking into account the environmental friendliness of production. This includes the selected fabrics to be processed and the cutting methods that give minimal industrial waste of fabrics.

References

1. Fashion Industry Waste Statistics. URL: <https://edgexpo.com/fashion-industry-waste-statistics/>.
2. Anguelov N. *The Dirty Side of the Garment Industry*. CRC Press. Taylor & Francis Group. 2016. P. 4.
3. Environmental impact of the textile and clothing industry. European Parliament Brifref URL: [http://www.europarl.europa.eu/RegData/etudes/BRIE/2019/633143/EPRS_BRI\(2019\)633143_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2019/633143/EPRS_BRI(2019)633143_EN.pdf).