



## ПЛАТФОРМА 6 ПІДПРИЄМНИЦЬКІ ТА ОСВІТНІ АСПЕКТИ ДИЗАЙН-ДІЯЛЬНОСТІ

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### IS ZERO WASTE POSSIBLE IN A FASHION DESIGN

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*About 15% of the fabric used to make clothes end up in the waste during the cutting process. Although there are number of recycling initiatives in the fashion industry towards circular economy, the application of zero-waste principles in fashion design practice and production are only solitary cases. This paper analyses zero-waste fashion design learning-teaching square assignment method to help students to practice the form, style, technological and prototyping towards sustainability in fashion design. The analysis shows the purposefulness of the constraints in the experimental fashion design process and reveals the importance of missing skills.*

**Key words:** Zero-Waste Fashion Design, Sustainability Fashion.

#### INTRODUCTION

Over the past two decades the fashion industry and research community have become increasingly aware of the scale of the fashion's environmental problems [1] the linear economy – the 'take-make-use-dispose' model of production and consumption – date from the Industrial Revolution, considered an unsustainable [2], as the dominant approach in the fashion design education. The challenge for the fashion industry is transition towards circular economy practices [3]. Fashion design pedagogy asks the students to create a product assortment based on their unique vision of living or dressing, in a top-down design process that rarely starts from ecological considerations of the raw materials or sites of production [4]. Addressing the circular economy requires a new focus on the knowledge, skills and competencies required to create sustainable production and consumption [5]. Some existing practice theories suggest that appropriation (the use of goods and services to accomplish personal and social practices) and appreciation (the symbolic, communicative, and aesthetic aspects of consuming) are important processes [6] in practicing sustainability. Young designers must be sustainability literate; however, the fashion industry is reluctant to engage in sustainable design [7]. It is argued that changes in the design thinking and practice should occur if education for sustainable development is thoroughly embedded in the design curricula. Fashion design education teaches the theoretical knowledge and practical skills of the design process, which are manifested through the



application of the style, shape, materiality, colour radiances and pattern elements of a trendy item in fashion design. The silhouette and cut lines that define the fashion image, its style and attributes that tell the story of the fashion design collection, are very important. Designers are playing key role in converting clothes into the fashion [8]. This paper analyses zero-waste fashion design learning-teaching SQUARE assignment method, its challenges, and opportunities to help students to practice the form and style, technological and prototyping towards sustainability in fashion design.

#### **PURPOSE. The purposefulness of the restrictions in task SQUARE**

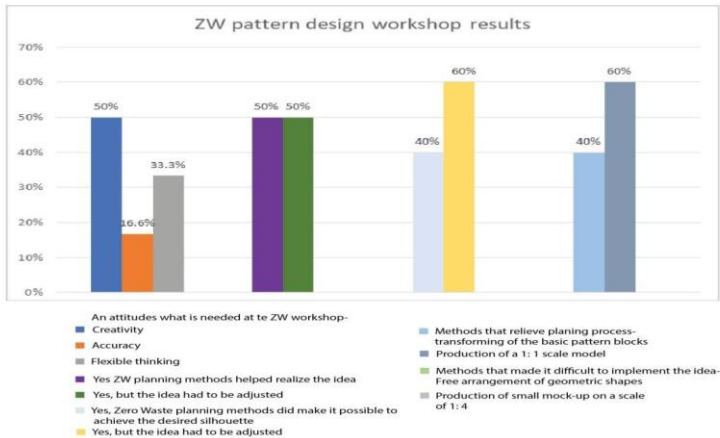
Specific restrictions of the square assignment help to reveal the missing knowledge and skills in education for sustainability in fashion design and to develop an understanding of the consistent patterns and the ability to identify them towards circular economy. For students, the assignment is a mind exercise through empirical experience that develops design thinking, the ability to see the clothing production process in a contextual perspective, provide the understanding and skills needed for professional work. Why the SQUARE assignment? The use of the full-width fabric is well known in the fashion history. It has long been used in the manufacturing of Japanese kimono and Indian sari, ancient Greek Chiton and many other historical clothing, as well as traditional folk costumes. Timo Rissanen identified five fashion creation methods – the traditional “Cut & Sew”, “Full Fashioned”, “Jigsaw” puzzle and sustainable clothing design methods Cradle to Cradle and A-POC [9]. The Jigsaw puzzle method is a version of the “Cut & Sew” sewing method, where the cut-offs are joined together along the length of the fabric like pieces of a puzzle, so that no waste is created and the pieces of garments fit together in one layout. This method of cutting can be seen in the traditional folk costumes of various nations, also in everyday clothing until the Industrial Revolution in Europe. Determined restriction - the amount of fabric indicates a limited amount of fabric that can be used in the development of a particular model. By choosing the square as the area of the fashion design work, where the width of the fabric is equal to the length of the fabric (usually 140 cm x 140 cm), type of the fabric, structure, the students create a layout using a block of basic cuts. The restriction of the type of clothing - shoulder clothing - marks the possibilities of the assortment, which are relatively wide and can be matched with the idea and corporality and helps to focus on the silhouette, shape and size of a particular part of the body. Restriction - the developed model must be wearable - determines the need for ergonomics, freedom of movement and indicates that the model is sewn by planning and performing the processing, fastening and other elements in accordance with the concept of the idea and the intended functions. Defining the exact pattern at the beginning of the first stage is a big challenge and a big risk, because the traditional sketch-cut-sewing technology will create fabric clippings, here we need to change the algorithm of thinking to keep all aspects in focus by manipulating with the skills and knowledge simultaneously.

#### **RESULTS AND DISCUSSION**

Within the framework of the assignment, the stage of the idea generation is the biggest challenge, because when you start working, by inertia, you sketch models forgetting about the restrictions, this stage is facilitated by creating an



inspiration board to define the visual parameters of the idea and research of the shape with a 1:4 scale. Although in the survey after completing the Zero Waste course at 2021-2022 study year first semester where took part five bachelor program students from Art Academy of Latvia and four master's program students from the Estonian Art Academy fashion design department, to the question "Which methods made it difficult to implement the idea?" 50% of the respondents specified the small model in a scale 1:4 as burdensome, however, the method acted as a catalyst in the start-up process (fig.1).



**Fig.1.** ZW pattern design workshop results

Students have free choice of their stylistic expression in the process of creating models. In the search for the shape and development of the mock-up on a scale of 1:1, some students prefer the drapery technique; here they face the problem of converting the drapery into the cutting blocks and reproducing the model from the chosen fabric, which can be explained by lack of experience and underestimation of the importance of accuracy. Using pre-made basic cutting blocks in the design process, students arrange them as areas for marking different parts and configure them according to the idea; here it is important to understand the potential consequences of changes to give the product the intended shape, size and ergonomic capabilities. The dress created by the student Kirke Talu is an example of an experimental search for shape, where the leftovers are used to model the shape of the garment and the finishing details on the collar. The use of traditional clothing shapes, such as the Japanese version of the kimono, helps to organize the layout of the cutting areas owing to the potential for a clear and predictable result, such as silhouette, assortment and shape of the garment. The ability to react to changes at the stage of the design pattern development is of great importance in the process of completing the assignment, as shown by the analysis of the survey, 50% of students adjusted the silhouette of clothing to avoid having textile trimmings



## CONCLUSIONS

Experiments of the clothing prototyping assignment show that most of the course students have prior knowledge and previous experience in fashion design, have knowledge of the clothing design process, skills to depict the idea, model the cut-offs and sew. During the work on the assignment “Square” the weakest and missing skills were detected, which complicated the model development process. It was confirmed by the results of the analysis of the students’ survey after the course that students recognize the need for the designing and layout skills in the Zero Waste fashion design. Students with prior knowledge of designing have a better understanding of the cut-off layout, the ability to identify potential opportunities and freely manipulate with the shape, silhouette and cut lines of the garment.

Responding to the question is zero waste possible in a fashion design, it should be said that it is not yet fully recognised by the fashion design education as production system. Implementation of the square method – assignment into the sustainable fashion design programs in fashion education as a learning-teaching method will provide students with knowledge, skills and support zero waste design thinking, practising towards real sustainable fashion design and production.

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