

Case Report

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TEACHING METHODOLOGIES IN THE CREATIVE PROCESS IN KNITWEAR DESIGN: A CASE STUDY

Metodologias de Ensino no Processo Criativo em Design de Malhas: Um estudo de caso

ABSTRACT

The design and development of knitwear are fundamental areas in the field of fashion design, requiring a pedagogical approach that combines technique, creativity, and innovation. This paper analyses the project methodology applied in Knitwear Design course of the second year, second semester of Fashion Design Bachelor's degree at the University of Beira Interior, highlighting the importance of interdisciplinary integration, use of digital technologies, and fostering creative development. Thus, this study explores the various stages of the project process carried out in this context, with an emphasis on the relevance of market research, trend analysis, and experimentation with materials and specific digital technologies.

Furthermore, the research adopts an exploratory approach, using a case study focused on works developed by former students who successfully completed this course. The project methodology is exemplified through the analysis of collective portfolios of former students, including stages of the process, material samples, developed knit structures, and photographic documentation of the final products. Finally, the analysis of the collected data aims to demonstrate how the applied methodology positively contributed to the development of creativity, efficiency, and quality in the projects carried out within this course. This study aims to validate the adopted methodological approach and provide valuable contributions to future pedagogical practices in the field of fashion design.

RESUMO

O design e o desenvolvimento de malhas constituem áreas fundamentais no design de moda, exigindo uma abordagem pedagógica que articule técnica, criatividade e inovação. Este artigo analisa uma metodologia projetual aplicada na unidade curricular de Design de Malhas do 2.º ano da licenciatura em Design de Moda da Universidade da Beira Interior, destacando a integração interdisciplinar, o uso de tecnologias digitais e o estímulo ao desenvolvimento criativo. O estudo seguiu uma metodologia qualitativa e exploratória, enquadrada num estudo de caso selecionado de um conjunto de 13 projetos desenvolvidos no ano letivo de 2023. O projeto escolhido foi aquele que demonstrou desempenho excecional e a execução completa de todas as fases do processo projetual, constituindo um exemplo representativo da aplicação prática da metodologia. A recolha de dados integrou portfólios, amostras de estruturas de malha, combinações de fios e documentação fotográfica, bem como fichas técnicas e parâmetros estruturais. A análise considerou microtendências, pesquisa de mercado, definição de público-alvo, moodboards, conceito, desenvolvimento da coleção, parametrização estrutural, fichas técnicas e o produto final. Os resultados revelam que a metodologia fomentou a criatividade, a inovação estrutural e a experimentação com fios e malhas, assegurando coerência entre conceito e produto final. Os projetos foram posteriormente apresentados na exposição "Imaginação Expandida" (Covilhã, outubro-dezembro de 2023), evidenciando o impacto pedagógico e criativo da abordagem. O estudo valida a metodologia e propõe um modelo replicável para o ensino do design de malhas, contribuindo para a formação de designers mais criativos, críticos e tecnicamente

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preparados, reforçando o valor da investigação pedagógica aplicada.

KEYWORDS

Knitwear Design; Design Methodologies; Creativity; Fashion Design Teaching

PALAVRAS-CHAVE

Design de Malhas; Metodologia de Design; Criatividade; Ensino em Design Moda

1. INTRODUCTION

The fashion industry has undergone transformations driven by technological innovation, globalization, and increasing social and environmental awareness. As Barthes (1983, p. 12) observes, “the fashion system is a system of signs, whose code can be analyzed,” highlighting the complexity of this sector. Training fashion designers requires technical skills, critical thinking, creativity, and the ability to innovate. Barnard (2007, p. 5) reinforces that “fashion is not just a reflection of society, but also a social force in itself,” supporting the need for interdisciplinary pedagogical approaches that integrate multiple areas of knowledge.

Student-centred methodologies, such as Project-Based Learning (PBL), foster creativity, technical competence, and autonomy in fashion design and development courses (Fletcher, 2012). Building on these principles, this study presents a proprietary teaching methodology developed for the Knitwear Design Laboratory, integrating trend analysis, market research, yarn selection and definition of knit structures, pattern parametrization, and prototyping. Students apply this methodology throughout the design phases, selecting yarns of specific compositions and analysing technical parameters such as density, yarn count, twist, number of plies, stitch types, pattern repeat, and texture, ensuring conceptual coherence and technical accuracy.

The integration of digital technologies within CAD systems, using software such as SDS-ONE APEX 4 and LECTRA Kaledo Knit, allows for the anticipation of knit behaviour and the optimization of structures prior to physical production (Li et al., 2022; Čubrić et al., 2022).

This article is based on the analysis of a representative case study, selected from a sample of 13 projects developed in 2023, chosen for its outstanding performance and full completion of all project phases.

The guiding research question is:

How can a methodology specifically designed for knitwear design impact creativity, autonomy, and technical quality in student projects?

The main objectives of the study are:

- 1) To evaluate the effectiveness of the teaching methodology in training knitwear design students.
- 2) To analyse the relationship between creativity, technical skills, and autonomy in the execution of knitwear design projects.
- 3) To investigate yarn combinations and digital technologies to produce knit structures, aiming at functional and structural innovation.

2. STATE OF THE ART

2.1. Contextualization of Knitwear Design

Interdisciplinary integration is fundamental in the development of knitwear collections, allowing the creation of products that meet both aesthetic and functional requirements while conveying a coherent visual narrative. This process involves areas such as graphic design, textile engineering, trend analysis, production technologies, and sustainability, whose collaboration enriches the creative process and results in innovative, high-quality pieces.

Textile engineering ensures that knitwear meets functional and aesthetic standards through the careful selection of fibers and control of parameters such as density, yarn count, and elasticity (Spencer, 2012). Graphic design, supported by CAD systems such as Kaledo Knit and SDS-ONE APEX, facilitates the creation of complex patterns and experimentation with structures that are difficult to reproduce manually (Jung et al., 2012).

Trend analysis, using platforms such as WGSN and Trendstop, allows designers to anticipate market changes and guide design decisions (WGSN, 2021). In parallel, computerized knitting machines enable sophisticated patterns and large-scale customization, ensuring innovation and production efficiency (Fletcher, 2012). Sustainability plays a strategic role, with the use of recycled fibers and eco-friendly production techniques that minimize waste and environmental impact (Gwilt, 2014).

From a pedagogical perspective, the application of this interdisciplinary integration, combined with student-centred methodologies such as Project-Based Learning (PBL), allows students to develop creativity, autonomy, critical thinking, and the ability to transform ideas into tangible products, directly reflecting on the quality of the projects produced in the Knitwear Design Laboratory.

2.2. Interdisciplinary Integration in Knitwear Design

Interdisciplinary integration is essential in the development of knitwear collections, enabling the creation of products that meet both aesthetic and functional requirements while conveying a coherent visual narrative. This process involves multiple areas of knowledge, including textile engineering, graphic design, trend analysis, production technologies, and sustainability, whose synergistic collaboration enriches the creative process and results in innovative, high-quality pieces.

Textile engineering ensures that knitwear meets both aesthetic and functional requirements. Innovations such as the selection of fibers and precise control of technical parameters (yarn length, density, count, twist, and number of plies) are crucial to optimizing elasticity, strength, and comfort, as discussed by Spencer (2012) in *Knitting Technology: A Comprehensive Handbook and Practical Guide*. This enables the creation of knitwear that fits the body and offers durability for everyday use.

Graphic design plays a strategic role in developing complex patterns, particularly through CAD systems. According to Jung et al. (2012), CAD facilitates the personalization and replication of patterns, which is essential in a competitive market. Tools such as Kaledo Knit and SDS-ONE APEX 4 allow designers to experiment with complex knit structures, something difficult to achieve manually, making the creation process more efficient and precise.

Trend analysis is vital to understanding market shifts and consumer preferences. Platforms like WGSN and Trendstop provide valuable data to anticipate consumer behaviour, as highlighted by WGSN (2021), helping designers align collections with market expectations.

Computerized knitting machines also play a key role in production, allowing for complex patterns like jacquard and intarsia, adjusting knitting speed, and improving accuracy.

As observed by Fletcher (2012) in *Sustainable Fashion and Textiles: Design Journeys*, these machines support large-scale customization, balancing innovation and efficiency. Sustainability is increasingly central to fashion, including knitwear design. Gwilt (2014) in *Fashion Design for the Responsible Fashionista* emphasizes using recycled fibers and ethical production practices to minimize environmental impact. Applying sustainable methods ensures eco-friendly, efficient, and market-relevant knitwear.

By integrating these disciplines, students develop knitwear collections that are creative, technically rigorous, sustainable, and professionally viable, demonstrating the pedagogical impact and practical effectiveness of the methodology.

2.3 Project Module in Knitwear Design

The project methodology in knitwear design is pivotal for creating collections that integrate aesthetics, functionality, and technical precision. According to Cross (2001), design is a structured process that guides innovation. In knitwear design, this methodology requires a deep understanding of materials, production techniques, and digital technologies, as emphasized by Hennessey and Kautz (2017). Textile engineering ensures that knit structures meet requirements for durability, comfort, and flexibility (Tortora & Merkel, 2009).

In an educational context, this module prepares students for industry challenges by promoting experimentation, prototyping, and innovation, with a strong focus on sustainability, as highlighted by Fletcher (2014). Students explore market trends using platforms such as WGSN to anticipate consumer preferences (McKinney, 2016).

Competitor analysis and defining the target audience are crucial for ensuring collection relevance. As Barnard (2007) suggests, understanding cultural and social dynamics that influence consumer behaviour is essential. Knitwear designers must interpret these shifts to create collections that respond effectively to market demands.

Students are encouraged to use mind maps, storyboards, and moodboards to organize and communicate their ideas. These visual tools help align creative intentions with market expectations (Robinson, 2009).

Overall, this module provides a comprehensive framework for fashion design education, enabling students to develop innovative, functional, and sustainable knitwear collections while adapting to the rapidly evolving industry. The practical application of trends, competition analysis, target audience definition, and visual communication tools makes this module indispensable for the holistic development of designer

3. METHODOLOGY

3.1 Methodological Approach and Case Study:

Building on the theoretical framework presented, this section describes the methodological approach adopted in the case study conducted within the Knitwear Design Laboratory course. The research follows a qualitative and exploratory approach (Creswell, 2014), suitable for studying educational and design phenomena in real-world contexts. The main objective is to understand how students perceive and engage in the design process during the development of knitwear fashion products in the practical sessions of the course.

The applied design methodology was specifically developed to integrate the technical, creative, and experimental dimensions of knitwear design, guiding students from initial research to prototyping and final presentation. This approach is based on the principles of Project-Based Learning, promoting the resolution of real-world challenges and active student involvement in the conception and development of their projects (Thomas, 2000; Bell, 2010; Savin-Baden & Major, 2004).

1) Case Selection and Study Context

Among the 13 projects developed during the 2023 academic year, a representative case study was selected for its exceptional performance and full adherence to the different design phases. This project serves as a paradigmatic example of the practical application of the methodology developed in the course, allowing for an in-depth analysis of the knitwear design process.

2) Data Collection and Analysis

Data collection was based on a multi-source approach and qualitative triangulation (Denzin, 2012; Flick, 2018), including:

- Student portfolios, documenting the entire creative and technical process;
- Samples of yarns and knit structures, analyzed in terms of material, density, yarn count, twist, number of plies, stitch type, repeat pattern, texture, and volumetry;
- Photographic documentation of the developed knit structures, prototypes, and final products;
- Technical sheets with all production parameters and structural specifications.

The analysis focused on the consistency between the concept inspired by the microtrend and the final product developed, the innovation of the knit structure, the combination of chosen structures and materials, the technical quality of prototyping, and the integration of digital technologies, particularly the SDS-ONE APEX 4 and LECTRA Kaledo Knit software, which allow simulation of technical and mechanical behavior of knits, optimizing structures before physical production.

3) Evaluation Criteria and Phases

Project evaluation followed pre-defined criteria and weightings communicated to students, corresponding to the scheduled design phases of the course:

Design Phases	Percentage
Phases (A,B)	a)Microtrend analysis; b)Market research (products and competing brands) – 10%
Phases (C,D,E,F)	Target audience and persona definition; Moodboard; Collection concept – 30%
Phases (G,H)	Collection plan; Technical sheets – 60%

Tab.1 - Methodological Structure and Design Project Stages.

The project component represents 100% of the evaluation and includes criteria of research, creativity, technical rigor, and conceptual coherence.

4) Pedagogical Procedure

Throughout the design phases, students are encouraged to analyze the microtrend, conduct a thorough market study, and evaluate current products and competing brands exploring the same microtrend. They are also encouraged to test their ideas using the existing CADKNIT knit structure repository, develop samples first on a small scale and

subsequently on a larger scale, prototype their solutions, and refine their work through iterative cycles of continuous feedback provided by the instructor throughout the semester. This process, grounded in reflective practice and experiential learning (Kolb, 1984), creates an active and collaborative learning environment, bringing the academic context closer to knit techniques, dyeing processes, and other industrial practices, aligning it with the real demands of the fashion and textile design industry.

5) Validation and Methodological Conclusion

The integration of multiple sources of evidence, combined with the criteria, evaluation objectives, and direct observation in the teaching context, ensures the technical validity and credibility of the final results (Patton, 2015; Yin, 2018). Therefore, the proposed methodology constitutes a rigorous and replicable pedagogical model, capable of fostering the development of innovative, functional, and technically consistent solutions in knitwear design. The validation of results was ensured through triangulation among data sources, evaluation grids, and continuous feedback obtained during intermediate project reviews. This process confirmed the consistency between the defined pedagogical objectives and the outcomes achieved, ensuring the reliability and relevance of the analyzed data. By making explicit the selection criteria, analysis parameters, and validation process, this methodological approach provides a solid and replicable framework for the evaluation of knitwear design projects, constituting a robust pedagogical model that aligns the academic context with the creative and technical demands of the industry.

3.2 Case Study - Hipertradicional Project:

As a case study, the work developed by students Carolina Melício, Margarida Zhang, Mariana Costa, and Rodrigo Grave will be analyzed. They explored the microtrend “Hipertradicional.” Based on this microtrend, the students conducted research and developed the project, following the design methodologies applied in the Knitwear Design UC. This work will be presented as an illustrative example of success within the methodological approach adopted in the UC.

3.2.1 Analysis of the Microtrend

The fashion industry is characterized by its cyclical and ever-evolving nature, where trends emerge and fade quickly. As Sissons (2010, p.1) observes, “Designers are constantly seeking and collecting new ideas and sources of inspiration. Good designers need enquiring minds in order to continually produce fresh, contemporary work.” Within this context, the analysis of microtrends becomes particularly relevant, especially in knitwear design, a field that requires agility and responsiveness to market fluctuations. While macrorends represent long-term cultural and societal shifts, microtrends refer to short-term variations that can impact specific consumer niches (Posner, 2020).

At the initial stage of the project, students relied on WGSN data to support their trend research. The platform provided access to detailed reports on emerging directions in knitwear design, which were made available and contextualized by the instructor. Within this framework, the microtrend Hipertradicional was selected and thoroughly analyzed, focusing on product categories, design elements, color palettes, materials, and market segmentation. This exploration enabled the creation of a visually rich and conceptually coherent moodboard, which served as a foundation for the aesthetic and functional development of the project (fig. 1). The moodboard effectively synthesized the key references and inspirations drawn from the Hipertradicional trend, providing a clear direction for the design process. This exercise not only facilitated a deeper understanding of stylistic influences but also guided the practical implementation of the concept within the defined parameters, reinforcing the relevance of microtrend knowledge for fashion design practice.



Fig. 1 - Analysis of the Hipertradicional Microtrend and its corresponding Moodboard.

Regarding Category and Market Segmentation, microtrend analysis allows designers to identify the market segment (luxury, casual, sports, among others) in which an emerging trend fits. Concerning Design and Style, microtrends often highlight new silhouettes, cuts, and details that gain popularity. Colors are another key element in knitwear design, and identifying the dominant color palettes is essential for creating products that capture consumer interest. Regarding Material selection, microtrend analysis reveals which types of yarns, fabric blends, and finishes are in the spotlight, guiding designers in choosing materials that not only follow aesthetic trends but also meet functional and sustainable requirements (WGSN, 2024).

3.2.2 Market Research and Target Audience Definition

Defining the target audience is crucial in the process of developing a fashion collection, as it allows designers to create pieces that meet the specific needs of a consumer group. The audience is segmented based on demographic, geographic, and behavioral characteristics, such as age, gender, location, and consumption preferences (Kotler, 2012). Working with microtrends also involves creating a persona, which serves as a tool to anticipate consumer expectations. This persona is built from factors such as lifestyle, occupation, and cultural context (Driscoll, 2011). With an in-depth understanding of the target audience, designers are able to more effectively direct their collections, aligning them with the expectations of the ideal consumer and ensuring their relevance in the market (Wolfe, 2010). The target audience and persona created for this work are presented in fig. 2.



Fig. 2 - Target Audience Definition and Persona.

3.2.3 Moodboard and Collection Concep

The moodboard is an essential visual tool in fashion design, used to gather references and inspirations that guide the development of a collection. According to Faerm (2011) in *Fashion Design Course*, the moodboard organizes visual elements that reflect the collection's concept, serving as a constant reference throughout the creative process. It can include images, fabrics, color palettes, and other elements that convey the project's identity.

Bina Abbing, in *The Fashion Sketchbook* (2004), considers that the moodboard represents the designer's emotions and creative vision, serving as the foundation for sketch development and material selection. Julie P. Heffernan, in *Fashion Design Techniques* (2007), emphasizes the importance of the moodboard in maintaining focus on the concept and guiding creative decisions. In addition to

being an aesthetic tool, it is also strategic, as Connie Amaden-Crawford notes in *The Art of Fashion Draping* (2011), aligning the creative vision with the technical aspects of design (fig. 3).



Fig. 3 - Mood board
Hipertradicional.

The concept of a collection is one of the most crucial stages in the creative process, as it guides all subsequent decisions. The concept begins with choosing a theme, which serves as inspiration and foundation for the entire collection. Tim Gunn, in *Gunn's Golden Rules: Life's Little Lessons for Making It Work* (2009), highlights that the theme should be relevant, motivating, and capable of communicating a clear idea, acting as the cornerstone for the creation of the pieces. This theme can be influenced by various sources, such as art, culture, history, or the designer's personal experiences (fig. 4).



Fig. 4 - Collection Concept.

The design of the collection, including the selection of colors, textures, and materials, must reflect both the aesthetic of the theme and the needs of the target audience. David Comer, in *Fashion Design: A Process of Exploration* (2011), argues that colors and textures have a significant power to evoke emotions and sensations, being essential in communicating the desired atmosphere. Colors should be carefully chosen, as they can reinforce the concept and influence how the collection is perceived. In summary, the concept of a collection must be well-defined and consistent, integrating the theme, target audience, and design decisions such as colors, textures, and materials. This concept guides the entire development of the collection, ensuring that all pieces are aligned with the designer's creative vision while maintaining coherence at every stage of the process (fig. 5).

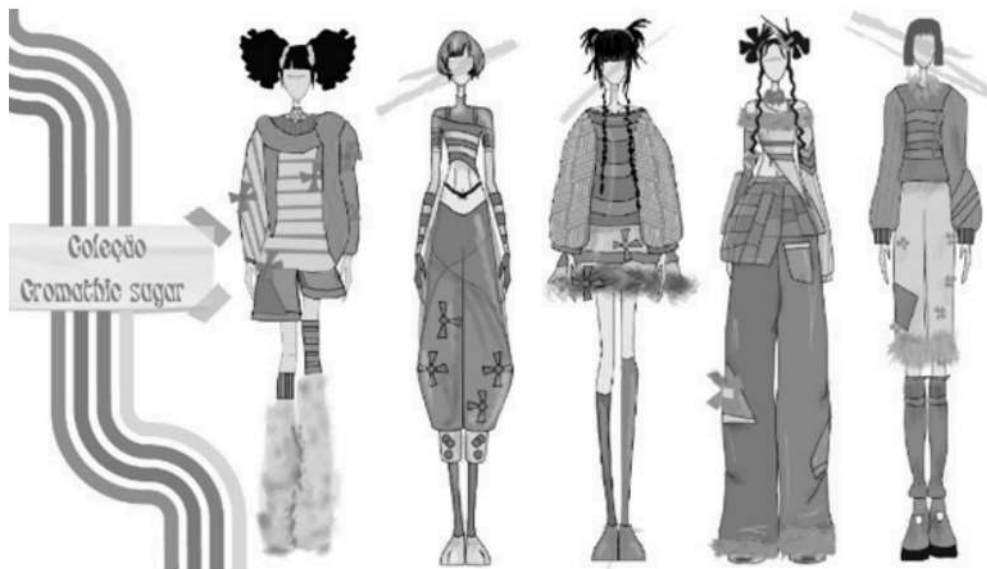


Fig. 5 - Collection Map.

The knitwear design process developed in this project was initiated by the conceptual and aesthetic definition of the collection, centred on the Harajuku style (a movement that was consolidated in the 1990s and 2000s as a way of self-expression and aesthetic resistance to the rigid norms of Japanese society), known for its creative, irreverent expression and the overlapping of contrasting layers, colours and textures. The aim was to create an item of clothing which would convey both comfort and visual boldness, appealing to young people between the ages of 17 and 22. The choice of acrylic yarns, in shades of pink, orange and green, was guided by the need to ensure elasticity, resistance and a soft touch, suitable for everyday use, combined in different knit structures that allow for the exploration of relief and contrast effects. The manufacturing process included the production of the knits in the defined sizes, the creation of individualised patterns (sleeves, front and back), and the assembly of the parts through sewing and finishing with a pink rib knit structure. The critical reflection of this piece is reflected in the importance of textile experimentation, especially in the development of knits and the unconventional combination of hypertraditional and contemporary elements, which result in an expressive, inclusive piece that represents the aesthetic freedom of current fashion design.

3.2.4 Storyboard

The storyboard is an essential visual tool in fashion collection development, adapted from the film industry to help structure and communicate the creative narrative of a project. According to Steven Faerm in *Fashion Design Course* (2011), the storyboard allows for the transformation of creative concepts into concrete visual representations, facilitating communication between designers and the creative team. It may include sketches, reference images, color palettes, and material details, helping to plan and visualize the collection in a coordinated manner. In addition to being an aesthetic tool, the storyboard is strategic for ensuring that collections are coherent and impactful, aligning creativity and structure (fig. 6).

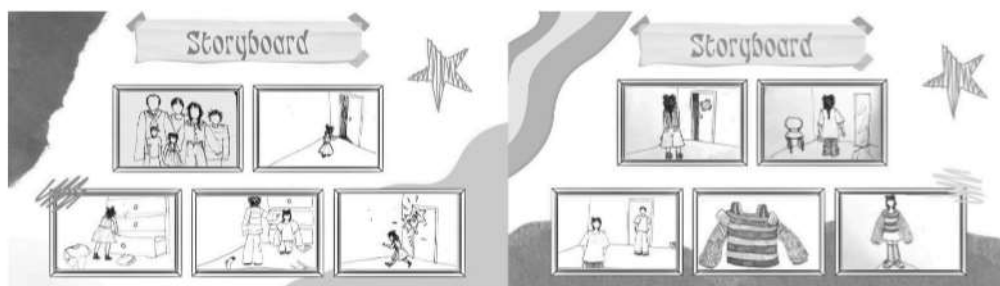


Fig. 6 - Collection Storyboard

The Croqui 3 sweater was selected for knitwear production due to its structural innovation, chromatic harmony, and technical suitability for textile experimentation. The design presents an oversized silhouette characterised by voluminous, asymmetrical sleeves, with the right sleeve featuring a checkered pattern and the left one composed of broad horizontal stripes. This asymmetry establishes a visual dialogue between order and disruption, enhancing the expressive dimension of the garment.

The chosen colour palette: pink (PANTONE 1925 C), orange (PANTONE 165 C), yellow (PANTONE 109 C), green (PANTONE 376 C), and blue (PANTONE 313 C), conveys vibrancy and emotional energy, aligning with a youthful and contemporary aesthetic. The strategic use of contrasting warm and cool tones creates visual rhythm and reinforces the identity of the piece.

From a technical perspective, the use of jacquard or intarsia knitting allows the integration of geometric motifs directly into the textile structure, ensuring precision, durability, and material coherence. The rib trims in pink and green perform both aesthetic and functional roles, providing structural stability while maintaining the characteristic volume and elasticity of the oversized form.

The selection of this sweater is justified by its capacity to merge aesthetic innovation and material performance, exploring the expressive possibilities of knitwear through the interplay of colour, texture, and volume. The piece embodies a contemporary approach to design that values experimentation, comfort, and structural refinement within the field of fashion creation (fig. 7, 8).



Fig. 7 - Selection Justification – Sweater Sketch 3



Fig. 8 - Sweater construction within knitwear production

3.2.5 Photoshoot

To conclude the project phases, the photoshoot of the piece created by this group was presented, with the aim of capturing the essence of the design and highlighting the details that define the collection's identity. In this photoshoot (fig. 9), the goal was not only to showcase the piece's interaction with the environment but also to convey the creative concept and functionality of the design in a clear and impactful way.



Fig. 9 - Photoshoot Hipertradicional.

4. CONCLUSIONS, LIMITATIONS, AND FUTURE PERSPECTIVES

This study demonstrates that the phased, project-based methodology (PBL) applied in teaching knitwear design was highly effective. Structuring the work into defined stages with set deadlines, combined with continuous feedback from the instructor, enabled students to develop their projects consistently, balancing creativity and technical precision. Close supervision, together with the support of knitwear technicians and access to a diverse collection of knit structures (produced on the Shima Seiki and analysed in terms of material, density, yarn count, twist, number of plies, stitch type, repeat, texture, and volume), allowed students to experiment, combine different structures, and validate their ideas technically.

Students were able to produce original and feasible collections that successfully merged creativity with technical execution. The work followed all project stages, including trend analysis, market research, competitor product analysis, moodboards, prototyping, and digital simulation using SDS-ONE APEX 4 and LECTRA Kaledo Knit. The chosen case study stood out because it completed all stages, presented well-founded technical solutions, and resulted in a complete, creative, and realizable collection.

The methodology fostered the development of key competencies in students, including creativity, critical thinking, autonomy, and the ability to translate ideas into tangible products. Throughout the semester, students were able to experiment, learn from iterative cycles of trial and improvement, and achieve consistent, high-quality outcomes. Access to technical resources, combined with continuous guidance, enabled them to test solutions that are realistic within the context of the fashion industry.

The explicit integration of Project-Based Learning (PBL) principles reinforced experiential and reflective learning, promoting active engagement, problem-solving skills, and independent decision-making, aligning academic activities with professional practice. Importantly, the students' projects were publicly showcased in the exhibition "Imaginação Expandida" (Covilhã, October–December 2023), highlighting the pedagogical and creative impact of the methodology and providing recognition for their work beyond the classroom. This presentation underscores the relevance of the methodology in fostering high-quality outcomes that are visible, appreciated, and valued within the broader design community.

This approach can be applied in other courses with similar conditions: clearly defined work stages, close mentorship from instructors and technicians, and access to a variety

of materials and prototyping resources. Following this structure, other students could also develop creative, feasible, and well-executed projects. The methodology provides a robust roadmap for guiding complex design work, effectively bridging academic learning and professional industry practice.

This study focused on a single case; therefore, the results cannot be fully generalized. Future research could involve multiple projects or larger student cohorts to confirm the methodology's effectiveness and explore its applicability in diverse academic and industrial contexts.

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Ana Santiago é doutoranda em Design de Moda, com investigação centrada em novos materiais e processos têxteis sustentáveis, na Universidade da Beira Interior (UBI). Realizou um estágio na indústria têxtil e do vestuário, tendo trabalhado em várias áreas do desenvolvimento de produto. Após o estágio, participou em dois projectos como bolsista de investigação. Realizou um estágio de mobilidade de curta duração no Laboratório DIKNIGA (Development of Innovative Knitted Textiles and Garments Laboratory), na Universidade de West Attica, Grécia. Prestou, durante 4 anos, apoio letivo na Unidade Curricular de Laboratório de Design de Malhas na Licenciatura em Design de Moda da UBI. É membro colaborador da Unidade

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Nuno Belino é doutorado em Engenharia Têxtil, ramo de Materiais e Física Têxtil e com mestrado em informática aplicada aos têxteis. Foi o diretor de produção da Nova Penteação e Fiação da Covilhã, empresa têxtil vertical, onde desempenhou as funções de supervisão do departamento de tecelagem, acabamentos e de informática têxtil durante cinco anos. Foi consultor da empresa Fitecom, Comercialização e Industrialização Têxtil S.A, empresa vertical têxtil, na área de automação industrial e informática aplicada ao têxtil. As suas áreas de investigação são os têxteis técnicos, particularmente, os têxteis médicos, os têxteis funcionais, design funcional a nanotecnologia têxtil, informática têxtil e análise de imagem e de textura de imagem aplicados a substratos têxteis. Foi coordenador e membro de equipa de vários projetos financiados a nível Nacional e Internacional.

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