

Color Lab IFRJ: practical color exercises for fashion courses

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ABSTRACT

This paper is part of a research project called Color Lab IFRJ (Laboratório de Cor – IFRJ, in Portuguese) that aims, among other things, to analyze and propose practical color exercises for fashion courses at the Federal Institute of Rio de Janeiro – IFRJ Campus Belford Roxo. One of the main objectives of Color Lab IFRJ was to develop and to adapt teaching procedures to the Campus reality, helping to increase the understanding of color theory concepts for fashion courses. In this sense, two practical exercises called ‘Color Book’, ‘Paper Dolls’ and ‘Jenifer’s Look’ were proposed in order to analyze and to explore the interaction of colors in fashion design. With practical exercises like those, the teacher has taken up important questions of color theory with the students such as color dimensions, color contrast, and chromatic harmonies. These practical exercises provide students with color tools and knowledge that can consciously and objectively be applied in fashion design.

KEYWORDS Color Education, Color Literacy, Practical Exercises, Fashion Design, Doll

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1. Introduction

Color is a valuable tool for visual artists, stylists, fashion designers, architects, and many others. The analysis of an anonymous questionnaire completed by freshman students of the Federal Institute of Rio de Janeiro – IFRJ Campus Belford Roxo shows that students find that color theory is important for fashion design projects. However, research shows that the students start attending fashion courses of IFRJ Campus Belford Roxo with very superficial knowledge regarding color theory and have difficulty in understanding and differentiating basic concepts of color theory and working with color spontaneously or intuitively (Quattrer and Gouveia 2018:1). Still according to previous research, in Brazilian Elementary School and Middle School, color is treated with less importance when compared to other contents of the Art curriculum, which contributes to the perpetuation of conceptual problems in color education (Quattrer 2019:83).

It should be noted that IFRJ Campus Belford Roxo has suffered over the last few years with funding cuts and this has had a negative impact on new Campuses such as IFRJ Campus Belford Roxo, which is located in one of the poorest areas of the state of Rio de Janeiro. The lack of physical space and material resources for teaching color theory is a challenge. The IFRJ Campus Belford Roxo fashion courses are composed of students of very different ages. For example, some students are still in high school while others have completed high school some forty years ago.

In this sense, the teaching experience of the authors, in agreement with Hirschler, Lopes and Oliveira (2011) and Bergström (2002), points out that the path to a successful experience on color education in Arts and Design courses at different levels – high school, graduation, and post-graduation – is to demonstrate to students the intellectual challenge of studying and working with color through practical exercises of investigation and chromatic analysis. Therefore, the act of creation is a very important factor for color theory understanding in the IFRJ Campus Belford Roxo fashion courses and the creative process is fundamental.

2. Objectives

The research project called Color Lab IFRJ (Laboratório de Cor – IFRJ, in Portuguese) was created in order to analyze and propose practical color exercises for fashion courses of IFRJ Campus Belford Roxo and, among other things, to support the cataloging activities of Modateca IFRJ's fashion collection.

Due to the lack of physical space and material resources for teaching color theory at the IFRJ Campus Belford Roxo, one of the main demands of Color Lab IFRJ is to develop and adapt teaching procedures to the Campus' reality, which is to help increase the understanding of color theory concepts for fashion courses.

3. Method

In order to achieve the objectives of the Color Lab IFRJ project and to establish the selection criteria for color theory concepts to be applied in practical exercises of chromatic composition for fashion courses, theoretical support was sought from authors concerned with color education in Arts and Design: Albers (2009), Berns (2016), Frova (2008), Gage (2000), Guimarães (2004), Monzeglio (1972) and Munsell (2019).

The practical exercises 'Color Book', 'Paper Dolls' and 'Jenifer's Look' were structured in order to explore the interaction of colors in fashion design and to collaborate in the fixation of basic concepts of color theory, for example, primary and secondary colors, dimensions of color (hue, value and chroma), color contrast and color harmony.

3.1. Color Book

From the above-mentioned authors and the didactic experiences in color teaching, a practical and individual exercise of research, selection and comparison of color samples of paper, fabric and trims called 'Color Book' was structured and applied to fashion students throughout color theory classes (Fig.1).



Fig. 1: Details of students' Color Books elaborated with paper and fabric samples and fashion trims in the Color Theory class, offered in the Fashion Course of IFRJ Campus Belford in 2018. Photo: Milena Quattrer.

From the theory of color perception and color contrast, three basic criteria were established for the elaboration of the Color Book: (i) it should be divided into sections, each intended for one type of material (paper, fabric, trims, etc.); (ii) the pages should be white or black without any lines, since they are the base for gluing the color samples; (iii) and, the color samples of paper and fabric must be the same size and measure at least 2 cm x 2 cm.

It should be mentioned that the selection and organization of the color samples is up to the student, who should justify it at the time of evaluation of the exercise. But it is worth saying that students are also instructed to search colors from the contents of color theory studied in each class. And it has proven to be an interesting challenge for them, who often choose to organize color samples based on the dimensions of color (hue, value and chroma) and to construct color palettes from the concepts discussed in class.

One of the color palettes commonly elaborated by students is based on warm and cool colors. This distinction refers to the qualification of colors as warm or cool following psychological and cultural interpretations. According to Albers (2009:80), in the Western tradition, yellow, red, orange, as well as their respective variations are commonly accepted as warm colors. While blue, green and violet, and their respective variations are commonly considered cool.

However, such interpretations are relative and a certain color may appear warmer or cooler according to its chromatic composition. For example, a red can be warm or cool depending if the red is tending to yellow or tending to blue. Moreover, it is important to point out that the relationship between color and meaning is not arbitrary or accidental, it is part of a cultural context that, according to Heller (2014), can be understood from the historical tradition and psychological symbolism. In this sense, according to Gage (2000:22), "colors seem 'warm' or 'cool' only metaphorically." Since, when it comes to the visible spectrum, already studied by the students, wavelengths for blue-violet have the highest warming capacity, while the wavelengths for red have the lowest. If necessary, the teacher can revisit this concept with the students.

3.2. Paper Dolls

A practical exercise with paper dolls and paper samples was structured in order to contribute to the understanding of the concept of chromatic harmony. It is applied in parallel to the Color Book exercise and before the exercise Jenifer's Look.

Carried out under the supervision of a teacher, students are oriented to develop a color composition for paper dolls based on the concepts of chromatic harmony by affinity

and harmony by contrast using only paper samples (Fig. 2).



Fig. 2: Details of students' exercises on color composition with paper dolls elaborated with paper samples in the Color Theory class, offered in the Fashion Course of IFRJ Campus Belford in 2019. Photo: Milena Quattrer

Color harmony by affinity is the coordination of analogous hues or similar color shades. And the opposite of harmony by affinity is harmony by contrast, which refers to the coordination of contrasting hues and/or color shades. These are: (i) black and white contrast; (ii) value contrast; and, (iii) hue contrast. The black and white contrast occurs through the coordination of achromatic or neutral colors (white, black, and their lightness variations (i.e. gray scales)). The value contrast concerns combining light and dark colours, i.e., when a saturated hue is coordinated with white, black or gray. Finally, the hue contrast refers to the coordination of different hues (one of the strongest of its kind occurs when complementary saturated hues are used, e.g., yellow and violet).

This exercise has proven to be very relevant for the teacher to clarify some doubts about the dimensions of color. The teacher revisits the concepts like primary and secondary colors, dimensions of color, and color contrast. These important concepts were presented and discussed previously with features such as: (i) a color wheel of subtractive mixtures adapted from Itten (1961), in which the three primary colors magenta, yellow and cyan are used (hue variation), (ii) two scales of value (chromatic and achromatic), and (iii) a chroma scale (saturation variation).

Especially, it could assist the teacher in explaining the concepts and characteristics of hue and in differentiating monochromatic and achromatic concepts. It is necessary to clarify that in fashion design it is common to use the term 'monochromatic look' to refer both to the use of shades of one hue and the use of black, white, and gray only. However, the teaching experience of the authors points out that for teaching purposes it is important to clarify and differentiate the concepts of monochromatic and achromatic.

So, in IFRJ Campus Belford Roxo Color Theory classes, the term monochromatic look is used only to refer to a set of samples varying in value or saturation but of constant hue. And, the term achromatic is used just to refer to a set of samples varying from white to black through gray – the latter obtained from the mixture of white and black.

3.3. Jenifer's Look

A practical group exercise with doll's costume design was structured to be applied after the Paper Dolls exercise in order to explore the interaction of colors in fashion design and to collaborate in reviewing and applying basic concepts of color theory. The exercise was named Jenifer's Look (Look da Jenifer, in Portuguese) from the doll's label used when the exercise was first applied in 2018. At this time, an Instagram profile was created to make public on social media the students' projects (@lookdajenifer) after a student's request. In order to expand the diversity of bodies and skin colors to reflect the diversity of the IFRJ Campus Belford Roxo students, in 2019 Barbie® dolls with different skin colors and body types were acquired with the research project funding.

Carried out under the supervision of a teacher, during the Jenifer's Look exercise students are oriented to develop in group a color composition for doll costume design with different types of clothes, footwear and fashion accessories using low-cost materials like fabric samples and fashion trims. The color palette for doll costume design should follow some criteria pre-set by the teacher such as be in line with the previously defined main theme and be based on chromatic harmonies by affinity and/or contrast (Fig. 3). At this stage, chromatic harmonies by affinity and/or contrast content has already been studied in previous exercises.



Fig. 3: Students' color palettes for doll costume design developed using Color Cards in the Color Theory class, offered in the Fashion Course of IFRJ Campus Belford in 2019. Photo: Milena Quattrer.

It is also important to point out that color trends content is often previously discussed with students through a

chromatic research exercise called 'Moodboard' that is a simplification of a Fashion Moodboard commonly used by fashion professionals. In the Moodboard exercise the group of students makes use of a system of guiding signs and codes, such as keywords, images, color palette, textures, materials, among other inputs.

Thus, students are aware of the main color trends in fashion when choosing the color palette. However, for didactic purposes, students are encouraged to investigate chromatic harmonies beyond the color palettes presented by color trend agencies and associations.

It is noteworthy that for the Jenifer's Look exercise the chromatic composition is more important than the modeling or the quality of workmanship. This is because at this stage some students do not have sufficient knowledge of modeling and sewing. So, the teacher evaluates the students' progress both as a group and individually from the pre-established criteria: (i) the application of chromatic harmonies (Fig. 4) and (ii) the adequacy of composition to the main theme.



Fig. 4: Students coordinating fabrics in gray, yellow and magenta for doll costume design in the Color Theory class, offered in the Fashion Course of IFRJ Campus Belford in 2018. Photo: Milena Quattrer.

Finally, after completing the exercise, students are invited to present their chromatic compositions to other students and the teacher. At this point the student group points out and justifies its choices and the dolls are photographed (Fig. 5). It is a substantial moment for the whole class and a moment of reflection on color choices and on metamerism and color inconstancy.



Fig. 5: Doll costume design developed by students in 2018 and 2019, in the Fashion Course of IFRJ Campus Belford. Photo: Milena Quattrer.

4. Conclusion

Color theory classes have been offered as part of IFRJ Campus Belford Roxo fashion courses since the second half of 2017. From the analysis of the students' midterm exams (MV1) and final exams (MV2) over the last two years, it was possible to reassess and change the didactic sequence of the practical exercises Color Book, Paper Dolls and Jenifer's Look.

As said earlier, students start attending fashion courses of IFRJ Campus Belford Roxo with very superficial knowledge regarding the color theory, and the lack of physical space and material resources for teaching color theory is a challenge. In this sense, Color Book, Paper Dolls and Jenifer's Look have proven to be an important didactic resource for discussing in a playful way relevant questions and concepts about color theory, such as color dimensions, color contrast, and types of chromatic harmony.

Moreover, exercises like these have been shown to be very attractive and thought provoking for students. With the help of these exercises, students are consciously and objectively trained to perceive how color is an important resource in fashion design.

5. Conflict of interest declaration

The authors declare that there is no conflict of interest regarding the publication of this paper.

6. Funding source declaration

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