DESIGNING HOME DECOR PRODUCTS FOR UMBRA, WITHIN THE INTERNATIONAL COLLABORATION FORMAT AS AN ACADEMIC EXPERIENCE FOR UNDERGRADUATE STUDENTS

Alejandra María VELÁSQUEZ POSADA and **Luis Fernando PATIÑO SANTA**
Universidad EAFIT, Medellín, Colombia

ABSTRACT

Product Design Engineering at Universidad EAFIT offers a special undergraduate course that allows students to have their curriculum in a flexible way. The main goal is to design home decor products for a world leading company: Umbra. This paper presents a case description of a university-industry collaboration (taking into account previews experiences with other local industries) in which outlines the course's methodology based on Umbra's design contest: to explore fresh and original designs, within the international format *collaborations.umbra.com*. It describes the company's briefing, the design process and the feedback from the company. One of the biggest motivations is that students have the opportunity to design for an international company and have the possibility that their products could be chosen to be produce by Umbra. Among the skills students develop are the ability to read the company's language to understand its brand identity, as well as to increase the application of design tools such as mood boards [1], emotional design [2], the use of semantic adjectives [3] and the use of the formal referent as an inspiring element. The new product must fulfil three requirements: original, practical and keep brand identity, in order to fit Umbra's brief. The most relevant aspect of the course is the professional training students receive in refining the product's form and aesthetics -to adjust the design to the consumer preferences- and how the methodology course enhances student skills, such as creativity and sensibility, in order to get prepare for their out coming mandatory industrial semester.

Keywords: University-industry collaboration, design education, innovation and product design

1 INTRODUCTION

In the current economic context, the ability to innovate represents a crucial element in strategic competitiveness. Design makes a significant contribution to this process: not only functional improvements, but also formal freshness can be introduced; the product can also be filled with new value and meaning [4]. Some companies search for fresh ideas in undergraduate students, because they are capable to design with accurate methodologies and propose new ideas for the market, proving that these products are innovative and reflect the company's brand.

This paper describes an academic experience between Canadian company Umbra and Universidad EAFIT. At the beginning of 2013, TUGO (Colombia's franchise for Umbra) approached Universidad EAFIT searching for students who might be interested in a design contest within the international format *collaborations.umbra.com*. Around 15 students participated and there was a finalist (Simon Guerra) who won the first place with his product, an organizer for glasses. The owner of Umbra, Paul Rowan, gave a lecture to undergraduate students on *"10 out of 1000 risks I took for innovating at Umbra"*. After this experience, our Engineering faculty saw an opportunity to create a "Special Project" course for the second semester of 2013. In this course, students would design home decor products for Umbra. Twelve students with excellent drawing skills as well as an interest in product semantics were selected along with their portfolios. Sourcing projects from industry facilitates access to real-world problems, skill development and project management experience, and has become an increasingly popular feature of design engineering programs [5].

Section 2 of this paper describes the course's methodology of this collaborative project and shows how each stage contributes to the development of an Umbra product design. Section 3 shows how

boards are the main tools for designing products according to brand identity, in order to increase student skills related to formal language. Results are presented and discussed in Section 4, while Section 5 presents the paper's conclusions.

2   COURSE METHODOLOGY

By modifying the format of Umbra's contest –expanding it from 5 to 16 weeks in order to fit the academic semester of our undergraduate students– the course's methodology is structured in 6 stages: research, inspiration, ideation, embodiment design, detail design and final presentation. Figure 1 shows the stages in ensuring a complete product design process.
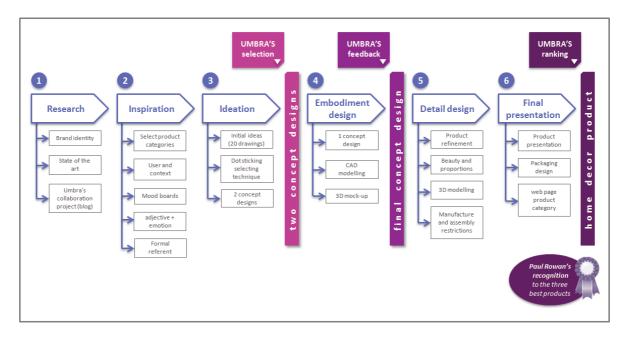

Figure 1. Design process of home decor products for Umbra, within the international collaboration format as an academic experience

The stages of the design process are:
- Stage 1: Research. The first weeks of the course are devoted to comprehending Umbra's brand identity and its philosophy. Students have to make a state of the art of similar companies that design home decor products.
- Stage 2: Inspiration. Students have to select a product category of their preference and, by choosing the context and user for that specific product, the inspiration stage starts. By making the mood boards, they also choose adjectives and emotions in order to have an inspiring element (a formal referent such as a tree, a flower, or a geometric figure).
- Stage 3: Ideation. Students brainstorm initial drawings by using the inspiring element to design their new product. Then, they must choose two concepts to develop them in greater detail. By using the dot sticking technique [6] and taking into account Umbra's feedback, students choose their best concept.
- Stage 4: Embodiment design. All the product parts are conceived in order to achieve a final concept design. After this activity, students show their products again to Umbra's design team, so they can have feedback on the final concept.
- Stage 5: Detail design. The detail design stage is for product refinement. Special emphases are placed on the balance, beauty and proportion of the product shape. In this stage, students build a 3D model, taking into account manufacturing and assembly considerations.
- Stage 6: Final presentation. The final stage includes the packaging design, as well as the placing of the product in Umbra's web page (in the appropriate product category). Each student prepares a final presentation to send to Umbra for their final ranking.

The main goal of this six-stage methodology is to guide students in the right way to finding solutions that follow Umbra's brief and their product categories. Umbra's participation helps students by improving their skills in every stage.

In terms of methodology, two types of feedback are given. The feedback from the teacher's course is related to the design methodology (to accomplish every stage presented in Figure 1). On the other hand, the feedback from Umbra's design team is more linked to the product itself (how the design fits into the product category, how the product form matches Umbra´s brand identity, how the idea is original, and finally if the design has a commercial possibility in the market). Nine, out of eleven products, were coinciding opinions in terms of product form by gathering fresh and original design. During the course there were several group sessions to discuss the ideas with TUGO (Colombia's franchise for Umbra) participation. Renders were sent by e-mail, so experts from Umbra's design team can discussed them regarding functional aspects, indicative features of the product, benchmarking, use of materials, original concepts, playful ideas, simple and modern products. They send written feedback through e-mail, at three moments in the semester, so each student can redefine their design.

3   DESIGN TOOLS: TEACHING STRATEGY

The collaborative projects that Umbra has with some universities include the Art Centre, The George Brown College, and Shenzen University. They also have an ongoing partnership with the Pratt Institute that is now entering its ninth year. The models vary by school; some will email concepts for feedback, others use the collaborations blog, while, in other cases, Paul Rowan conducts live critiques through Skype or in person.

In this specific collaborative project with Universidad EAFIT, student's concepts are emailed for feedback. The starting point of the project is to understand Umbra's design parameters for home decor products. Figure 2 shows an example of Umbra's design collaboration brief.
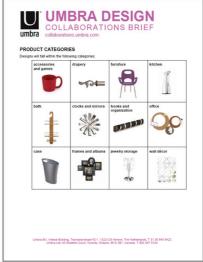

Figure 2. Umbra's design brief

During stages 2 and 3 (inspiration and ideation), it is very important that students make three mood boards: the user and lifestyle board, the emotional board and the product board. All of them have one purpose: to achieve a correct product styling according to Umbra's brand identity. As Umbra says: *"The aesthetics and specifications have to be consistent with Umbra's design language"*. Figure 3 shows these three boards.

Figure 3. User and lifestyle board, Emotional board and Product board, as a teaching strategy

- Board # 1 - User and lifestyle board: This board allows the student to visualize the product user and also his/her lifestyle, atmosphere and environment, the products he/she uses and likes, the way he/she lives, and their favourite colours. *The main goal is to understand if it is consistent with Umbra's market.*
- Board # 2 - Emotional board: The student has to define the emotion that the user will feel with the new product. It is very much like a promise. A maximum of three words should be used. Both emotion and an adjective have to be tangible in the new design. Applied to the product, this is what we call product semantics. *The main goal is to understand if it is consistent with Umbra's language.*
- Board # 3 - Product board: According to the category that each student selects, it is also very important to construct a state of the art and look at similar products to the one the student is designing. *The main goal is to understand if it is consistent with Umbra's brand.*

Design tools are used to improve the methodology, and also to enhance student's performance when designing products in which language must be consistent and coherent with Umbra's brand identity. Figure 4 describes this process.
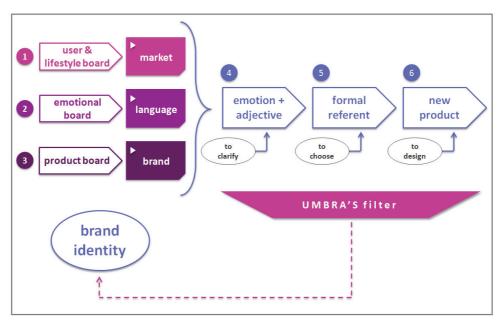

Figure 4. The three boards as a tool for designing according to Umbra's identity

After building the three mood boards, the conclusion must be the definition of the emotion and adjective. They give hints for choosing a formal referent: shapes, colours and textures are taken as inspiring elements for designing the new product. This allows fresh and original designs to fulfil Umbra's requirements. The students also use *Trendhal* –a web page built by Manuel Lecuona (Spain)– in their design, using several inspiring elements based on current trends. Figure 5 shows an example of the formal referent.

Figure 5. The tree as a formal referent

4 RESULTS AND DISCUSSION

The results of the "Special Project" course were eleven new home decor products for Umbra. Students made digital presentations and physical models. Pictures of these and the final presentations were sent to Umbra's design team for the final ranking, as shown in Figure 6.

Figure 6. Pictures of the physical models made by the students.
"Ditt" - one of the three finalists

Umbra chose "Ditt" (product 6: mail and key holder) as one of the three finalists, because its design reflects Umbra's brand accurately, and it is a simple and practical product. Some aspects (like proportions and materials) should be improved in the future in order to commercialize the product and find its right place in the market. The shaping of innovative products is complicated, because the intended new objects have no real 'predecessors' in their existence [7]. However, the most valuable part of this course experience is that students understand how design tools help them innovate with news forms and languages, while also having the opportunity to work with an international and expert design team. From the eleven products, five are closer to Umbra's language, according to Umbra's design team (products 1, 2, 6, 8 and 9 in Figure 6). They found these products to be very casual, innovative, modern and affordable; that fulfilled most of the requirements of the design's brief. On the other hand, the reason why the other six products don't match Umbra's language is because of the difficulty that some students have during form-giving in design. Using this methodology does not guarantee accurate results; some students are not capable of using the boards and applying them when defining the product's shape. From an institutional perspective, benefits include access to real-world problems, exposure to current industry, and enhanced standing in the community. For senior undergraduate students, this can be an excellent vehicle to test their skills before entering the workplace. For companies, it can afford access to fresh ideas and university resources otherwise beyond their means. Despite the clear benefits associated with university-industry collaboration, there are a number of challenges in the set-up and execution of such schemes [8]. A survey of the course's twelve students during the 2013-2 semester at Universidad EAFIT was conducted after the process. Answers to the questions are graded on a scale of 1 to 5, in which 5 is an "exceed expectations" mark and 1 a deficient evaluation. The following are some of the most relevant comments:

- Third-year students felt comfortable during the course, but said it was also very demanding.
- Design skills were achieved and also reinforced during the course, with a special emphasis on product semantics. Also, students felt they improved their communications abilities in a second language (English).
- All students said that the course was very fulfilling and that they would like to have more of the same type during their academic experience.
- Feedback received by students was very valuable and helped them continue keep going when the idea was good, or modify it when this was needed.
- Students would like to have more feedback from the Umbra's design team, which means that they would like to have contact more than three times so they can feel more close to the real world. They said that the company should also help them by choosing the product because since the company has the vision of the real market, they can better guide students to design more desirable products.

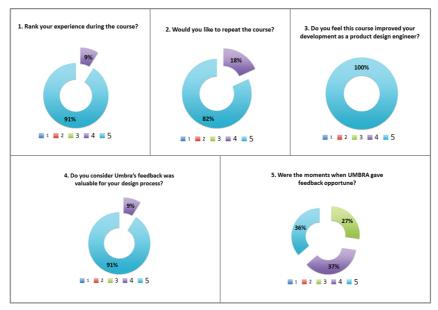More results from the survey are shown in Figure 7.

Figure 7. Charts from the survey's results

5   CONCLUSIONS

This paper describes an academic experience centred on the design process methodology used for home decor products at Umbra, within the context of an international collaboration format. The main purpose is to standardize this methodology for future courses, as part of the flexible curriculum at Product Design Engineering (Universidad EAFIT).

One of the methodology's key elements is that students use boards as a design tool, along with Umbra's feedback, in order to adjust the product shape to the company's brand identity, taking inspiring elements for designing innovative and original products.

From the product development opportunity, it is evident that academia and industry can work together well, and this adds significant value to both. It is like having a real client. Virtual feedback from Umbra's design team at three moments during the academic semester is a distinctive experience for our students, because they are confronted and pushed to give concrete and professional solutions for a real company.

The training that students receive to carry out their industrial semester with a higher level of competences and abilities is the most relevant aspect of the course, along with the practice of designing with an international design team that works with very prestigious design programs in the world; it provides a unique learning period for the student.

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