

The user experience in vernacular design and erudite design

A experiência do usuário no design vernacular e no design erudito



Augusto Meurer

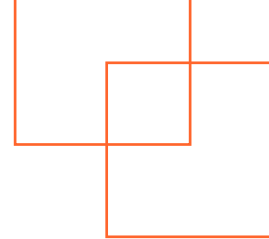
UX Design Expert - UNIVILLE
Founding partner of Estúdio Ambos
gutomeurer@gmail.com



Isadora Burmeister Dickie

PhD in Design - UFPR
Professor of the Design Course at Univille
isadora.dickie@gmail.com





ABSTRACT

This paper presents the results of a conclusion work on the specialization course in UX Design from Univille. It aims to investigate how the user experience occurs when using vernacular products and erudite products. The methodology is a case study, with a qualitative-quantitative and descriptive approach. This study analyzes and compares two different products, one from vernacular design and the other from erudite design, using the user experience evaluation method called 'AttrakDiff' (HASSENZAHN et al., 2008).

KEYWORDS

Vernacular design; Erudite design; User experience.

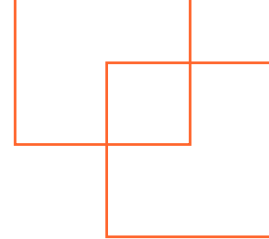
RESUMO

Este artigo apresenta os resultados de um trabalho de conclusão do curso de especialização em UX Design da Univille. Tem como objetivo investigar como ocorre a experiência do usuário ao utilizar produtos vernaculares e produtos acadêmicos. A metodologia é um estudo de caso, com abordagem quali-quantitativa e descritiva. Este estudo compara dois produtos diferentes, um de design vernacular e outro de design erudito, utilizando o método de avaliação da experiência do usuário denominado 'AttrakDiff' (HASSENZAHN et al., 2008).

PALAVRAS-CHAVE

Design vernacular; Design erudito; Experiência do usuário.





INTRODUCTION

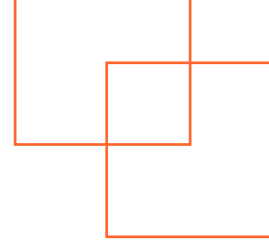
Among the numerous fields of design, this paper focuses on product design. A product can be conceptualized as a material or immaterial object, the purpose of which is to fulfill the desire of a consumer (STARK, 2015). However, 'product' is used here to specifically designate material objects. Therefore, immaterial products such as websites or applications are outside the scope of this study.

Design products can be classified as vernacular or erudite. While the erudite design product is made by professionals who have had access to knowledge from academia, the vernacular design product is carried out by informal workers who have acquired their knowledge by means of observation and practice (VALESE, 2007). The perception that vernacular production is proper to the design area, made it possible to identify scarcity and the need for research analyzing vernacular design products through the study of user experience, content that is typically addressed by the erudite production of design.

User Experience (UX) is defined as: " person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service" (ISO, 2010, p.3).

Based on these facts, the problematization of this study was made with the following question: 'Are there significant differences in how user experience occurs in products resulting from vernacular design and erudite design?'

The general purpose of this study was to investigate how user experience occurs when utilizing vernacular and erudite products. For this purpose, the case study methodology was adopted, and the research was divided into two stages. The first one introduces a theoretical rationale regarding 'product design' and 'user experience', and addressing 'vernacular design', 'erudite design' and the generic model of Product Development Process (PDP) proposed by Rozenfeld et al. (2006). The second part is the analysis and comparison of user experience utilizing a vernacular design product and an erudite design product, by means of 'AttrakDiff' tool (HASSENZAHN et al., 2008).



2 THEORETICAL BASIS

2.1 Product Design

Löbach (2001) describes product design as an industrial activity. According to the author, industrial design (or product design), in addition to being a project practice, is an adaptation process of industrial products to the physical and psychological needs of users. For Stark (2015), a product is anything that fulfills the needs of users and, thereby, generates revenue for a company. However, this study expands the meanings of 'product' and also includes popular objects, which do not necessarily aim at industrial production.

This industrial conceptualization of design is also addressed by Cardoso (2000). According to him, the formalization of design arose due to the change in the means of production, which occurred during the Industrial Revolution, when manual labor gave way to mechanized labor. Before this period, products were manufactured by craftsmen, who knew every stage of production, including project design. Design would have arisen from the rupture of such handicraft work, when the industry split the act of designing and the making. However, he states that the problem of conceptualizing design as 'the elaboration of projects for industrial production' lies in the difficulty of defining a moment and a place in which the change in the means of production took place since the mechanization of the manufacture of products can be observed since ancient times with the serial production of ceramic pieces, for instance.

Another fact that goes against the flow of this conceptualization aimed at industry is that many designers are replacing factory production in order to rescue artisan practices. Toca collection, conceived by the designer Marcelo Rosenbaum, is an example of this return to handicraft work. The preparation of this product line was done collectively with the inhabitants of Várzea Queimada village, in the state of Piauí, a place that has been producing several types of handmade products for decades, using local materials and techniques (ROSENBAUM, 2021, web). Figure 1 shows a necklace from the collection, made out of recycled tire rubber.

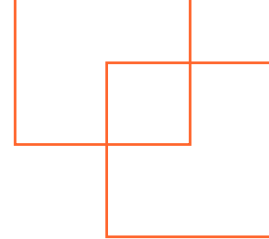


Figure 1: Necklace from Toca collection.



Source: Rosembaum (2020 web).

When analyzing the etymology of the word 'design', we find that it is not possible to reduce it to the manufacture of industrial products only. The word design has, originally in English, two ambiguous meanings: one abstract, related to the idea of conceiving, designing and assigning, and the other one as concrete, related to setting, arrangement or structure (CARDOSO, 2000). It is understood that design works towards the coupling of both of these meanings, that is, it attributes concreteness to abstract concepts through a project practice. For Valese (2007), this definition shows that the term design also applies to popular handicraft production, and not only to industrial production. This is noticeable because crafts are made so as to materialize the needs of users through the creation of objects, as well as the design practiced for the industry. Based on that, the author divides design into two types: erudite and vernacular.

Vernacular design, also identified as 'spontaneous design', 'popular design' or 'non-professional design', is performed by informal workers who did not acquire their knowledge from academic environment, but rather through observation and practice (CARDOSO, 2003). Therefore, it is a kind of knowledge that is informally passed on among people and readjusted as needed. For Valese (2007), vernacular design is related to popular production, mainly made by low-income populations, who use material and intellectual resources available in their locations. It is important to explain that this type of design should not be deemed hierarchically as inferior when compared to erudite design. The separation of terms is only done to clarify the similarities and differences between

these two types of design practices.

Erudite design is made by professionals who have had access to academic design knowledge and whose design practice meets the needs of clients who aim at industrial, semi-industrial or handicraft production (VALESE, 2007). Since it was originated in the academic environment, it can be interpreted that this project practice is based on scientific rigor, making use of methods and theories elaborated by researchers.

2.1.1 Generic Product Development Process (PDP) model

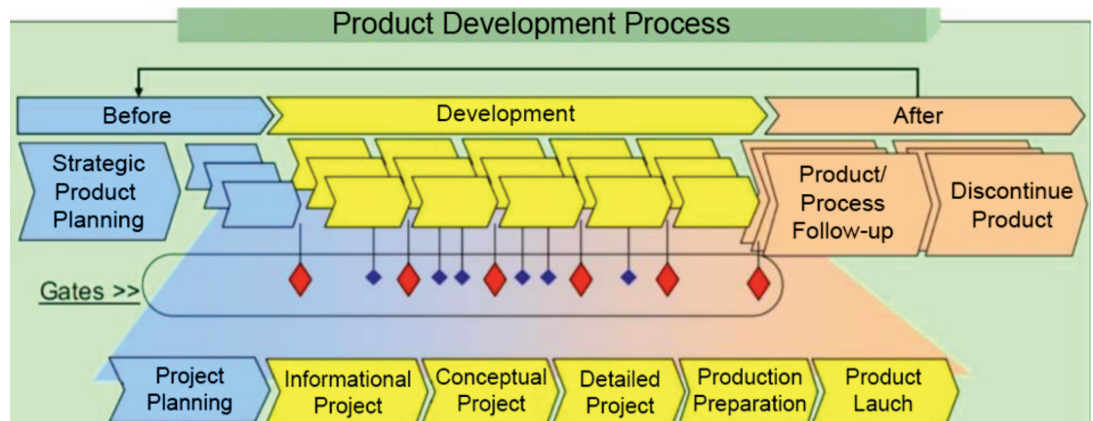
This scientific rigor, from the perspective of erudite design, is represented in the generic Product Development Process (PDP) model, which has three main stages, according to the model (Figure 2) presented by Rozenfeld et al. (2006).

a) Pre-development – project planning according to the marketing and technological strategies of the corporation;

b) Development – divided into the phases of informational design (data on users and project requirements), conceptual design (generation and evaluation of solutions), detailed design (refinement and prototyping of the selected solution), preparation for production (product is certified and ready for production) and, finally, the launch of the product on the market;

c) Post-development – product follow-up after its launch on the market. Validation studies can be performed at this stage.

Figure 1: Necklace from Toca collection.



Source: Rosembaum (2020 web).



A parallel can be drawn between the project model presented by Rozenfeld et al. (2006) and the steps of Design Thinking Canvas (DTC), proposed by Neves (2014). This methodology presents design as a general tool for innovation and problem solving, which seeks to focus the project on the understanding of the human being who is behind the use of artifacts. The project is divided into the following stages:

a) Observation – collection and analysis of data related to the context of the project. This stage includes survey concerning the user of the artifact, as well as possible references of the project;

b) Design – analysis of the data collected in the previous stage, generation of alternatives and selection of the most appropriate alternative. In this stage, the user experience utilizing the product is also elaborated. This experience is explored in its entirety, from the discovery of the existence of the product throughout its direct use, until its disposal.

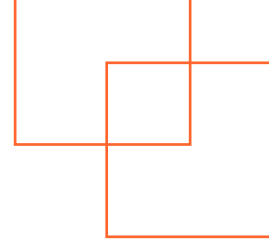
c) Setting – refinement and implementation of the alternative chosen. The setting is divided into two aspects: the form (morphological characteristics) and the function (main functionalities);

d) Publication – definition of strategies for market launch. In this stage, ways of catering to new users, keeping user loyalty and monetization are explored in order to develop monetary gains. Finally, the artifact is submitted to validation collecting user's impressions about the product.

The presence of the study of user experience (UX) in project practice can be found in the generic PDP model presented and in the DTC methodology as well. Rozenfeld et al. (2006) points out the importance of user study and validation of the final design, while Neves (2014) includes the elaboration of user experience in the design stage. For Araújo et al. (2018), UX survey can be carried out at any project stage, as long as the appropriate method and tools are chosen. The next topic covers user experience, as well as its main methods of study.

2.2 UX Design

User experience, field of study of UX Design (User Experience Design), are “[...] user's perceptions and responses that result from the use and/or anticipated use of a system, product or service” (ISO 9241-210, 2010, p. 3). This experience is perceived subjectively among individuals because it is



influenced by external factors, such as cultural and social contexts, and internal ones, such as previous user experience (DANTAS, 2014).

The study of user experience is a relatively recent field, which emerged in the mid-1990s to add to the study of usability. Usability survey identifies and corrects problems resulting from use and interaction with a given product. UX research in addition to studying usability, adds to the search for understanding human beings who make such use. To this end, we seek to study not only what users do, but also why they do it (BECCARI & OLIVEIRA, 2011). Thus, questions concerning emotions, beliefs, physical and psychological responses, and behaviors that occur before, during and after use are studied (ISO 9241-210, 2010). It is important to clarify that usability is an integral aspect of the study of user experience and neither can be interpreted antagonistically (PADOVANI et al., 2012). So, when analyzing the UX, the usability of the products is also being analyzed.

There are several types of methods with different approaches for UX research. The following are the main UX methods, according to Merizi et al. (2018).

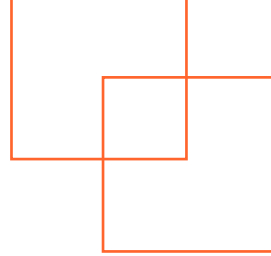
a) Experience Sampling Method (ESM) – it seeks to obtain reports about moments in users' lives. Thus, a questionnaire is sent digitally, at random time, so that the participant can report his experience using the product at that specific time.

b) Day Reconstruction Method (DRM) – it seeks to get memories of user experiences. Participants are asked to sequentially write down their experiences while using the product, on a daily basis.

c) Hp-UX Curve – it seeks to obtain reports on changes during user experience over time. In this sense, the participant receives a graph with two axes: one of time and the other of the intensity of the experience being analyzed. In this chart, the user should draw a curve that corresponds to the changes in his experience using the product.

d) Product Emotion Measurement Tool (PrEmo) – it seeks to understand the relationship between the looks of a product and the emotional reactions it causes. For this purpose, 14 emotions represented through images are shown to the participant. The user evaluates the intensity of each emotion in relation to how he felt while using the product.

e) Change Oriented analysis of the Relationship between Product and User (CORPUS) – it seeks to identify changes in user-product relationship. In this method, the participant evaluates the product based on previously



selected qualities. This same assessment is made after one or two years in order to understand what the changes were.

f) Scenarios – it seeks to obtain imaginary accounts of the use of a product as narratives. For such, one or more users are invited to imagine and interpret different situations of utilization of a product.

g) Facial Expressions – it seeks to identify the emotions of a user by means of the study of his facial expressions. To do so, the participant is filmed interacting with the product and a software analyzes his face.

h) AttrakDiff – it seeks to evaluate user experience with the product. In this method, pairs of semantically opposite adjectives are given. The participant chooses the adjectives that best suit his experience with the analyzed product.

Among the project stages presented by Rozenfeld et al. (2006) and Neves (2014), the case study proposed for this paper is intended to evaluate the UX in the 'post-development' stage of the PDP or 'publication' of the DTC, since both steps validate a pre-finished product. Thus, for the choice of the method used in this survey, the following criteria were considered: suitability to the 'post-development' and 'publication' stages, minimizing tasks overload (to reduce the possibility of fatigue and stress in the participants) and the absence of monetary cost for its execution (since it is a research without funding). It also disregards the methods that require many months to be carried out, so the due date of this paper can be met.

According to the criteria provided, the selected method for analyzing and comparing UX in a vernacular and erudite product is 'AttrakDiff'. According to Merizi et al. (2018), this method consists of a questionnaire comprised of 28 pairs of semantically opposite adjectives (or ten pairs in the reduced version of the method) representing possible qualities of the product. In this study, a reduced version of the method is used, made up of ten pairs of adjectives, to make the survey short and less tiring to the participants. Each pair of adjectives is placed at the extremes of a seven-point segmented scale. The participant then selects the point that best suits the analyzed product. As shown in Figure 3, a point near the end of the scale represents the adjective placed at that end, while a point near the center of the scale represents a position of neutrality.

Figure 3: Illustration of how AttrakDiff method works



Source: AttrakDiff (2022, web).

In the reduced version of the method, adjectives are divided into three groups of qualities (Hassenzahl et al., 2008):

a) Pragmatic quality (PQ) – it takes into account qualities relating to usability, functionality and clarity of interaction. Adjective pairs are: 'complicated or simple', 'practical or impractical', 'predictable or unpredictable', and 'confusing or clear';

b) Hedonic quality (HQ) – it considers the qualities that communicate values to the product and that evokes the personal development of the user. The pairs of adjectives are: 'stylish or tacky', 'premium or cheap', 'unimaginative or imaginative', and 'dull or captivating';

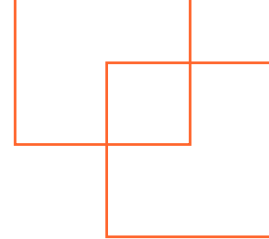
c) Attractiveness (Att) – consider the general perception of the user on the qualities of the product. The pairs of adjectives are: 'attractive or ugly' and 'good or bad'.

At the end of the survey, an arithmetic average is done including the result of all participants to evaluate the UX for each group of qualities. In the sources analyzed (Araújo et al., 2018; ATTRAKDIFF, web, 2021; Hassenzahl et al., 2008), the results obtained are represented on a seven-point scale numbered from '-3 to +3', to show the neutrality of the central point, represented at '0'.

3 METHODOLOGY

The methodology used to conduct this research was a case study, divided into two main stages: construction of a theoretical foundation and evaluation of user experience.

The first stage was prepared with a qualitative and descriptive approach, through the survey of the theoretical basis on the central themes. The first theme, 'product design', was addressed to investigate the



existing relationships between vernacular design and erudite design in the elaboration of products, as well as collect data for the methodological process of erudite design of products. The second theme, 'user experience', sought to identify the characteristics of application of UX study in product development. Through the study of this theme, it is possible to identify the most appropriate UX tool to be applied in this survey. To this end, the Non-Systematic Literature Review method was used.

The second stage had a quantitative and descriptive approach, and aimed at analyzing the user experience using a vernacular and erudite product, in order to compare both. For this purpose, the UX evaluation method called 'AttrakDiff' was used.

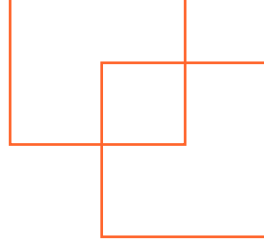
The choice of products to be analyzed in this study was based on the following criteria: to be a type of product that has vernacular and erudite copies; each copy must comply with the concepts of vernacular and erudite design, addressed in the theoretical basis; both copies must be widely known and of common use, so that it is possible to find a good number of participants who have experienced such product. In order to fulfil all these aspects, the broom was chosen as the object to be evaluated.

This study took into account the vernacular production broom as the one produced without academic knowledge, that uses existing materials and knowledge available in a given location. The straw broom has been produced in many rural regions of Brazil, where it is made out of cultivated raw material until the sale of the final product (Souza et al, 2006). Figure 4 illustrates this type of product.

Figure 4: Broom from vernacular design production.



Source: Primary (2020).



It is important to explain that many straw brooms are industrial, but this fact does not mischaracterize their vernacular aspect, since there has been an appropriation of this product by some industries that have mechanized their manufacturing process using erudite knowledge. The origin of the straw broom is the vernacular design and, therefore, its study is conducted here. Figure 5 shows the non-industrialized production of this product, which fits the characteristics of vernacular design of non-academicism and use of local knowledge and materials.

Figure 5: Craftsman producing a straw broom.



Source: Souza et al. (2006).

Regarding the broom of erudite production, those whose conceptions have direct origin in academic knowledge were considered. Therefore, brooms produced by the industry were analyzed. As addressed in the theoretical foundation, the erudite knowledge of design can be applied in industrial or handicraft productions. Here, an industrial product is analyzed since it traditionally has a demand for strict requirements in the design process. Figure 6 shows an example of erudite design production, the 'V-7' broom model, from the manufacturer 'Condor', derived from erudite design production.

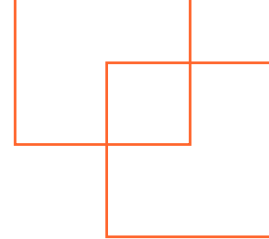


Figure 6: Broom from erudite design production.



Source: Condor (2021, web).

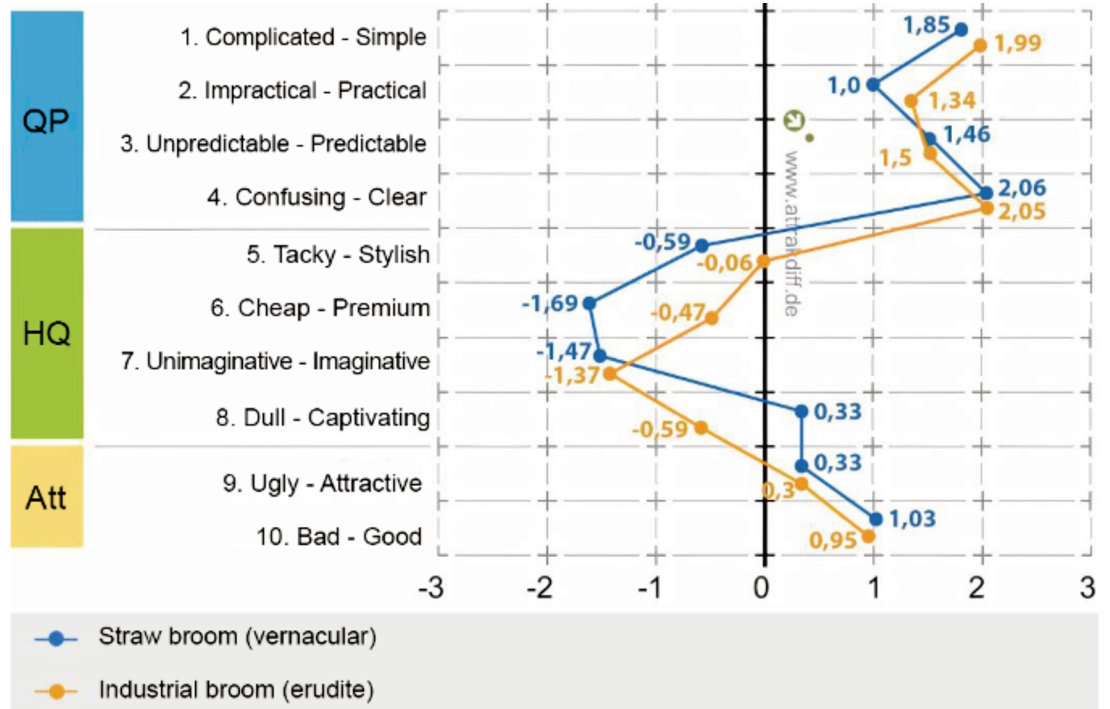
Even though, there is a website designed exclusively for the application of the 'AttrakDiff' method (www.attrakdiff.de), there are only options in English and German, which makes it difficult to use it in Portuguese. Thus, the adjective pairs in this method were inserted into a Google Form (www.docs.google.com/forms) and then, the survey link was released to get participants responses.

The form was structured as follows: first, there was an explanation that it was an anonymous survey for academic purposes, and then there was the question 'Would you like to take part in this survey?'. If they answered affirmatively, an image of a straw broom was shown followed by the question: 'Have you ever used this type of broom?'. For positive responses, ten pairs of adjectives for product analysis was shown to the participant. Then, the image of a 'Condor' broom was also shown, followed by the same questions as done with the first broom. After collecting the responses, the data were entered on the website 'AttrakDiff' which processed them and prepared the comparative graphs of both products analyzed.

4 RESULTS

Sixty participants answered the form. Out of which, 25% did not answer questions about the vernacular broom, since they had never used it. The questions about the erudite broom were answered by 100% of the participants, because everyone had already used it. Figure 7 presents the data collected based on the experience of using both brooms by a comparative graph with the arithmetic average of the responses in the form.

Figure 7: Comparative graph with the arithmetic mean of participants' responses.



Source: Adapted from AttrakDiff (2021, web).

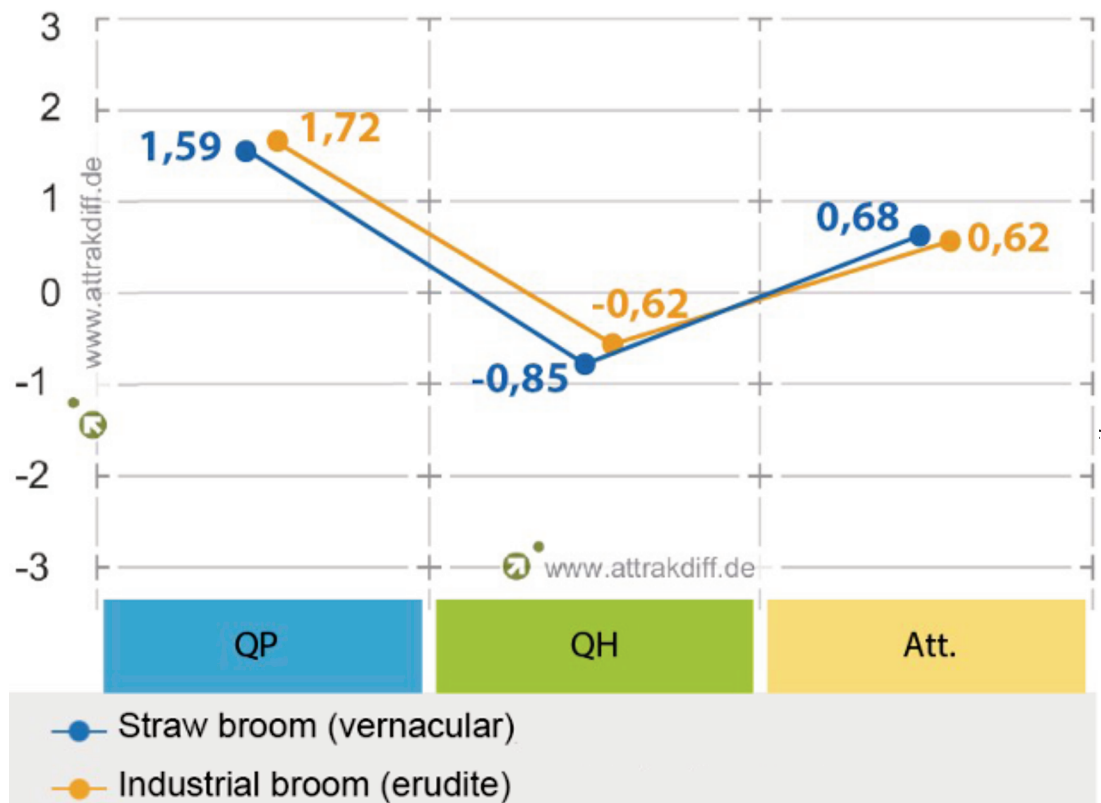
When comparing both brooms, similar results are noticed in most pairs of adjectives. Pairs 1, 3, 4, 7, 9 and 10, have insignificant numerical differences between the products analyzed, ranging from 0.01 to 0.14. Therefore, the user experiences with both products are close. In pairs 2, 5, 6 and 8, greater differences are observed ranging from 0.34 to 1.22, which shows greater contrasts between the experience using the products in these items.

The pragmatic quality and attractiveness groups obtained positive results for both products, with similar scores. It is noticed that usability and general perception of the products are similarly positive in both brooms for the users. In the hedonic quality group, both brooms obtained predominantly negative scores, which demonstrates that the product instigates little user development. However, it cannot be said that the products communicate negative values. The adjectives 'cheap', 'tacky', and 'unimaginative', selected by users, are not necessarily evidence of low value. It cannot be stated, only upon application of the 'AttrakDiff' method, that users consider these adjectives as negative, because the value that is given to these characteristics could be subjective and vary from person to

person. Consequently, it was not possible to establish clearly, what the user's perception of these pairs of adjectives was.

To understand the overall experience of the products, Figure 8 presents a comparative graph with the arithmetic average of each adjective group.

Figure 8: Comparative graph with the arithmetic mean of adjective groups.

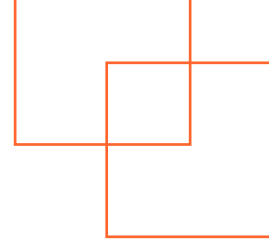


Source: Adapted from AttrakDiff (2021, web).

With the arithmetic average of each group, there is great similarity in the general scores of each product. Therefore, despite the inconclusive differences in the group of hedonic qualities, as a whole, the user experience in both products is similar. The only striking and non-subjective difference observed is in pair 2, which shows an advantage of 0.34 to the erudite broom in terms of practicality of use.

5 CONCLUSION

Based on the data presented in this paper, it is concluded that the user experience in vernacular and erudite products can be similar, as in the case



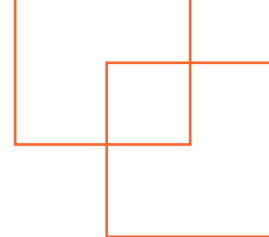
of the brooms, showing a slight advantage as to practicality in its erudite version. There is a counterpoint to the vision of Löbach (2001), which does not include vernacular production as belonging to the area of design. In addition to vernacular design sharing the same concept as erudite design, as Valse (2007) proposes, both can produce similar results in terms of user experience.

However, these findings cannot serve as a premise to deny the methodological study of erudite design. Only one type of product was surveyed, so, despite the similarity observed in the experiences of users, there is no evidence that other products would have produced the same outcome. On the contrary, the scientific rigor of erudite design, making use of methodologies and design tools, guarantees good user experiences. Possibly, this methodological rigor was the one factor that contributed to the best performance of the erudite broom in terms of practicality.

Therefore, it is suggested to look into future studies to verify whether there are similarities in UX compared to other vernacular and erudite products, in order to better understand which factors interfere with the outcome of user experience with a vernacular product. The straw broom is a product conceived and improved by several people throughout Brazil. Therefore, lesser-known vernacular products created by only one individual could be analyzed, to assess whether the popularity and quantity of designers developing a vernacular product interferes with the outcome of the user experience.

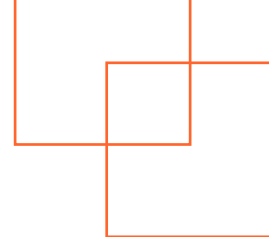
Another method of evaluation of UX might also be included in future studies. Through 'AttrakDiff' method, a great deal of quantitative data on UX with the products analyzed can be obtained. However, the lack of detailed information and the inconclusiveness of some pairs of adjectives is perceived, which demonstrates the need to add application methods that address these inconsistencies.

Finally, in addition to perceiving vernacular design as belonging to the design area, it is understood that popular-based productions are an important part of the development of design in Brazil, and as such, it must be given its right value.



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Augusto Meurer

Graduado em Design de Produtos — UNIVILLE (2015 - 2018). Especialista em UX Design — UNIVILLE (2019 - 2021). Mestrando em Design (Universidade Federal do Paraná). Sócio-fundador - Estúdio Ambos (2019 - presente): Coleção Tissot - 2021 e 2022 (5 projetos de móveis) Coleção Tremarin - 2021 e 2022 (16 projetos de móveis) Coleção GS - 2021 e 2022 (9 projetos de móveis) Coleção MilênioHome - 2022 (10 projetos de móveis) Coleção Femarte - 2022 (3 projetos de luminárias) Produtos autorais vendidos em marketplaces (4 projetos de móveis e objetos decorativos) Finalista Salão Design 2018 - Abajur Serena Finalista Museu da Casa Brasileira 2018 - Abajur Serena Vencedor Salão Design 2020 - Mesa de Centro Zals

ORCID: <https://orcid.org/0000-0002-7667-316X>

Isadora Burmeister Dickie

Doutora em Design pela Universidade Federal do Paraná (Sistemas de Produção e Utilização - UFPR/2014-2018). Mestre em Design e Expressão Gráfica pela Universidade Federal de Santa Catarina (Gestão de Design - UFSC/2008-2010). Graduada em Design, com habilitação em Programação Visual, pela Universidade de Joinville (UNIVILLE/2002-2006). Tem experiência profissional na área de Design Gráfico, Gestão de Design, e Comunicação Institucional. Já atuou como designer nas empresas Petrobras Transportes - TRANSPETRO e Cia. Latino Americana de Medicamentos, ambas em Santa Catarina. Pesquisadora dos temas Crowd-Design (crowdsourcing + Design), Design para Sustentabilidade, Inovação Social e Metodologia de Projeto (com ênfase em Design Colaborativo/Participativo. Atua como docente da Universidade de Joinville - UNIVILLE, dos cursos de graduação em Design, CST em Fotografia, MBA em Inteligência Estratégica e Especialização em Design. Foi professora da Universidade do Vale do Itajaí - UNIVALI, na disciplina de Plástica e Métodos Visuais, no período de agosto de 2010 a agosto de 2011. É integrante dos grupos de pesquisa: Ergonomia Aplicada, Grupo de Estudos de Design de Superfície com Interesse Social, e Design Participativo, todos da Univille e com registros no CNPq. Ocupa posição no Conselho Consultivo do Projeto alemão SustainabilityMaker. É idealizadora e coordenadora das

plataformas www.criajunto.com.br e www.projectool.com.br. Também, é sócio-fundadora da Academia do Design e integra a Diretoria da Associação dos Designers Gráficos do Brasil ? ADG Brasil (gestão 2020-2022).

ORCID: <https://orcid.org/0000-0002-9082-880X>

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