

## Linking the industrial design from the Bauhaus to current perspectives

## Vinculando el diseño industrial de la Bauhaus a las perspectivas actuales

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## Resumen

La Bauhaus es considerada una de las escuelas más influyentes en lo que respecta al diseño industrial. Sin embargo, el escenario actual es realmente diferente al presente durante la Bauhaus, y la práctica del diseño industrial ha evolucionado durante el último siglo. Este artículo, compara ambos enfoques en función de algunas características clave del diseño, como el contexto, los participantes involucrados y la innovación, para encontrar similitudes y diferencias. Esta comparación, basada en principios actuales, proporcionará una descripción general del diseño industrial de la Bauhaus y su relación y posible influencia sobre la práctica actual.

**Palabras clave / Keywords:** Bauhaus; industrial design; product design; context; innovation.

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## Abstract

The Bauhaus is considered one of the most influential schools of modern time when it comes to industrial design. However, the current scenario is different from the one the Bauhaus found itself, and industrial design practice has evolved during the last century. This article will compare both approaches based on key features of design, such as context, involved stakeholders and innovation, to find similarities and differences. This comparison based on current understandings will give an overview of the industrial design from the Bauhaus and its relatedness and possible influence on current practice.

**Keywords / Palabras clave:** Bauhaus; industrial design; product design; context; innovation.

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**Sumario / Summary:** 1. Introduction. 2. Design and its relationship with context. 3. Who is responsible for designing? 4. Design as a driver for innovation and evolution 5. Conclusions. References

## 1. Introduction

The German art school Bauhaus was established in Weimar in 1919 by Walter Gropius as the “first organized integral design school of the west” (Meissner, 1987, p.3). Its main objective was to create a new unity through the conjunction of diverse art forms and movements, as well as the generation of a new and powerful correlation of work between all the processes of creation (Bayer, Gropius, & Gropius, 1975). For this, the school brought together the different areas of artistic education, artisan workshops and architecture schools in the same place (Meissner, 1987). In this way, its founder, Walter Gropius, intended to offer practical advice to artisans and producers through designs, models and prototypes, to achieve the union between art and industry (Naylor, 1985).

This institution has been studied in depth over the years based on a diversity of points of view and it has been established as one of the influential events for the development of the foundations of current industrial design. Its short life span, as well as its evolution as a national movement limited to the borders of Germany, make the influence this school had over the design found in corporations worldwide something worth analysing, and above all, unique (Aldersey-Williams, 2000).

However, the scenario in which the school developed its activity is far from the current context, both political, technological, or environmental. The interwar period and the development of avant-garde artistic currents influenced the ideas established within the school, generating a series of ideas dependent both on the industrial development of the moment, as well as on the turbulent political environment. Besides the globalization of the industry, the great advances in technology in recent decades and the current political situation, the ideas founded by the German school are still taken as a reference by many companies and designers.

In order to find this influence, it is vital to analyse the similarities and differences between current practice in industrial design and the one that could be found under the roof of the German institution. For that, this article will

analyse three aspects related to industrial design, context, definition, and innovation, and will try to find relevant insights on how the Bauhaus was related to them.

## 2. Design and its relationship with context

A product is inherently linked to the context for which it is conceived for since the earliest stages of the design process. Not only because of its purpose, but also related to the interaction or effect the product will have in its most approximate environment, or the relationship with the stakeholders over the different stages of its life, analysing the context of a product is of great importance. This study helps designers to better understand the environment in which the product will be introduced, making it more relevant to it as well as more fit (Sleeswijk Visser, Stappers, van der Lugt, & Sanders, 2005). In this section of the article, I will explore how Bauhaus designers understood the context of their designs and how it affected said designs. A comparison with current understanding of context and its relevance in the design process will also be addressed.

Before analysing how context was incorporated in the Bauhaus, it should be defined. Sleeswijk Visser et al. (2005) define context as “all factors that influence the experience of a product’s use” (p.121). However, context could also be defined as the “company where the design project takes place” (Sleeswijk Visser & Stappers, 2011, p.2), or “describes features of the environment within which the activity takes place, but which are separate from the activity itself” (Dourish, 2004, p.22). This latter definition will be the one used to analyse the context of the Bauhaus. However, the activity mentioned will not be focused just on the use of the product or the design but around all the design process of it, taking also into account all the stakeholders involved.

The first issue of the Bauhaus journal offered the first insights on how context affects design written by the sculptor Georg Muche, as a criticism to the

expressionist ideas of the first period of the school. His article titled *Fine Art and Industrial Form* stated the following:

The illusion that fine art must be absorbed in the creative types of industrial design is destroyed as soon as it comes face to face with concrete reality (...) seems quite suddenly to lose its predicted significance as a form- determining element, since the formal design of industrial products (...) follow laws that cannot be derived from the fine arts (Naylor, 1985, p.127).

In this phrasing, Mucbe introduced the idea of designs being limited by laws and that they are affected by the reality they are part of. He continued offering a point of view that is similar to current approaches to industrial design:

The form of industrial products (...) are super-individual (...) result of an objective investigation into a problem. The limits of technology are limited to reality, but art can only attain heights if it sets it's aims in the realm of ideal (Naylor, 1985, p.127).

Even though the word context is not mentioned at any time, the influence it has during the design process is clearly highlighted.

Taking the offered definition as a frame of reference, the context considered for designs from the Bauhaus developed as the school evolved through its philosophies and principles. During the expressionist period of the institution, designs relied heavily in the designer's point of view and introspective practice. Therefore, products resulting from this methodology did not consider the external context but focused solely on the artist's interior world (Hochmann, 2002). As Hochmann (2002) stated in her book, one of the main characters from this expressionist phase, Johannes Itten, emphasized the analysis of the interior world over exterior features in his lectures: "I understood that introspective thinking and spiritual energy should compensate for our outward, technology-oriented point of view" (Hochmann, 2002, p.172).

However, with the incorporation of constructivist and neoplasticist members such as Theo van Doesburg or Laszlo Moholy-Nagy to the institution in Weimar, the shift to new philosophies would also impact the product's context analysis. The school's director, Walter Gropius, tried to establish the Bauhaus as a "centre for a superior industrial design" adapting the school, and therefore, the designs created inside its walls, to the "rhythm of the competitive world" (Hochmann, 2002, p.196). This meant taking inspiration from the industrial production by using the machine as a reference, and airplanes, factories, or North American silos as examples (Hochmann, 2002). Therefore, the context that was used for the creation of the designs and products was not the interior world of the designers, but the industry and its environment. Not only the industry was implemented in the analysis of the context of a product's development, but Moholy-Nagy also implemented the psychological, formal, and economical effects said products would have in humans to his process (Naylor, 1985).

The closest example from this constructivist stage of the Bauhaus, related to a current method for studying context was the one carried out by Marianne Brandt in her metal workshop. Her method was related to Contextmapping, in which the researchers, in this case the designer herself, involve the user to create an understanding of the environment in which the product will be used (Sleeswijk Visser, Stappers, van der Lugt, & Sanders, 2005). In this case, Brandt involved the stakeholder related to the production stage of the product development rather than the ones involved in the stage of use. She analysed what the industry and the local manufacturers needed not only to design the final product but also to improve the manufacturing process and its environment. In order to get this, she used procedures deeply rooted into current practices, such as, interviews at the places where it happened and visits to the factories to see and analyse the current context and procedures (Naylor, 1985).

A current day example that has parallelisms with Marianne Brandt's practice is the case of Senz° umbrellas. This product was developed by deeply analysing the context in which it was going to be used, biking when it is rainy and windy. Similar

to Brandt, the creators of this product interviewed a high number of users, and also worked in collaboration with aerodynamic specialists, and even other industrial design alumnus to create a company around this product (Smits & Bodewes, 2011). This way, the designer involved different stakeholders relevant to the product use, manufacturing and even selling, to understand better the global context of it.

On the other side of the coin, we find Marcel Breuer's working process according to Naylor (1985). Breuer developed his own formal criteria according to the context he defined for his furniture. This context of use, leaving aside the user and focusing on the physical space itself, was the most determining feature in Breuer's design parameters. In his theory of form, Breuer considered that all designs created for a home should be anonymous, drawn considering the space in which it would be incorporated, cheap and easy to mass-produce (Naylor, 1985, p.148). These principles enabled the user to introduce this furniture in any room they wanted, while always meeting their needs and being properly integrated (Bayer, Gropius, & Gropius, 1975, p.126). This way, even if it was established under Breuer's personal assumptions, the context was defined as the major factor when determining the shape of his designs.

A current day example of Breuer's ideas is Ikea and how they design their furniture. Ikea has found a way of making their furniture versatile by using white space and balance, while thinking how the piece would adapt to the space (Yu, 2019). Another aspect that follows what Breuer preached is how Ikea has been able to largely mass produce relatively cheap furniture adapting not only the manufacturing process but also adopting the storage and transportation to effectively reduce costs (Tyler, 2018).

During the last period of the Bauhaus, Hannes Meyer would redefine the meaning of the context taken into account when teaching his students. The functionalist scope he implemented in the institution affected deeply the process of the product's definition as well as the analysis of its effects in their surroundings. Linking form-giving to user needs and societal problems was his main

focus, as can be seen in his letter directed to the mayor of Dessau and gathered by G. Naylor in his book:

I taught the students the connection between building and society, the path from formal intuition to scientific building research and the precedence of people's needs over luxuries. I taught them to despise the multifariousness of idealistic reality and together we strove to attain the sole reality that can be mastered - that can be measurable, visible, and ponderable (Naylor, 1985, pp.171-172).

Here, correlations to current procedures and variables that affect the context are clearly mentioned. This approach that tries to design for the reality of the user, rejecting idealistic perceptions, using aspects of reality that can be measured in different ways and emphasising people's needs can be found in current design processes. Coming back to the definition offered by Dourish (2004), similarities can be found on how Meyer establishes these characteristics of the context in terms of society but also people's needs, and how he states they should be measurable, which in current practice is done with tools such as interviews or contextmapping.

In conclusion, when looking at the resemblance of the activity in the Bauhaus to current practices, some similarities can be found. As said before, Marianne Brandt's practice has some similarities and common attributes with contextmapping, especially when looking at the role and involvement of the users in the definition phase. When looking at the institution as a whole, the transition from expressionism to constructivism and then to functionalism also had an impact on the consideration of the context throughout the design process. This last one took the context more into account when looking at social problems more thoroughly and by moving to a deeper connection to industry and the involvement of the end manufacturers in the process.



### 3. Who is responsible for designing?

The fundamental element that established the bases of how students would design their creations was the preliminary course. This course would also be the trigger for the different styles and currents that would arise inside the Bauhaus and that have been mentioned in the previous section. In order to find the real influence of this course and its relationship with how design was taught, this section will analyse two different courses imparted by Johannes Itten and Paul Klee during the first period of the Bauhaus, the expressionist.

The first one, directed by Johannes Itten, was based on classical means of expression, such as colour or texture to create designs with great contrast. In said course, a set of tools was offered to the students so that they could get to their own conclusions by themselves, without applying dogmatic ideals. When the course was over, students got skills with which they were able to create new designs in a non-modular and non-deterministic way. In this way of working, the features of the elements that are part of the composition don't follow previously stated rules. This way of creating is clearly different from current engineering practice since this science is based on modularity, for example, in machine elements that must be replaceable, and based on design parameters that have been previously determined (Le Masson, Hatchuel, & Weil, 2016, pp.102-106).

Klee's course, however, is based on individual roles, global relationships, balances, and hierarchies. In this way students obtain tools with which they were able to analyse their designs as a whole as well as the individual features and aspects, and to study the possible interactions between said individual features. Here, Klee works in a similar way to how an engineer works, analysing the different parts within a global whole and in a way in which his theory resonates with the different forms and stages of current industrial design such as systematic design or embodiment design (Le Masson, Hatchuel, & Weil, 2016, pp.106-112).

Despite the clear differences between the two courses, both courses showed a clear intention of offering skills and tools so that students were able to develop

their own style. In other words, they taught a way to systematically create an individual style rather than teaching a determined style and its tools (Le Masson, Hatchuel, & Weil, 2016).

Analysing the preliminary courses in such a way, it can be seen that as Gropius said, there was no such thing as a Bauhaus style (Argan, 1957), and that "the main idea of the Bauhaus was to create a new unity through the conjunction of various forms of art and movements" (Bayer, Gropius, & Gropius, 1975, p.23). This development of the style would be individual for each student and would be driven by the tools offered in the various introductory courses. However, despite the fact that a Bauhaus style did not officially exist, there was always some sign of its didactic mechanism and philosophy in the designs and products that had some relationship with the school. Just as nowadays different products could be related to their creators, not because of their formal similarity, but because of their philosophy and characteristics, within the products designed by both teachers and students of the institution similarities could be observed frequently (Aldersey-Williams, 2000; Argan, 1957).

Examples of these differentiation based on the philosophical ideas behind the style can not only be found in industrial design but also other related fields like branding. A great example of how a solid design philosophy makes different products related is Apple. The biggest feature that defines Apple's way of doing things is simplicity. All their products present characteristics not only defined by aesthetic minimalism, but also an intuitive way of use and easy integration into the environment they are going to be part of (Shelley, 2015). With this, Apple products are not only categorized regarding a formal style, but rather, because of their way they follow the brand's principles.

Another example of this same idea is how Dyson designs their products. Their motto is "everything can improve" and this applies to all their product line. Dyson's innovative way of using technology in everyday appliances creates a link between all the portfolio while promoting efficiency, innovation and also reliability and high performance. Therefore, all Dyson products are characterized because of their use

of their brand's philosophy to strive for constant improvement by using a holistic approach to their process (Mahoney, 2008).

Even though, commonalities with current practice have been found, it is remarkable that individual activity is no longer the main way of working in industrial design projects. The increasing complexity of design projects created by the shift towards the fuzzy front end of industry made necessary the creation of multidisciplinary groups formed by people with different backgrounds (Sanders & Stappers, 2012). Therefore, the need of an individual design style has been reduced to more specific projects, even though it has an effect in the end deliverable of the project because of personal biases and ways of working.

Nevertheless, multidisciplinary groupwork was also present during certain periods of the Bauhaus, especially when Hannes Meyer became director. "I never design alone" was one of the first things he wrote when becoming head of the Bauhaus:

All my designs have arisen from the very start out of collaboration with others. That is why I consider the choosing of suitable associates to be the most important act in preparing for a creative work (...) The more contrasted the abilities of the designing brigade, the greater its capabilities and creative power (Naylor, 1985, p.168).

Here, it is seen how teamwork becomes a relevant factor in the new vision. Thus, there is a great resemblance to the current development of products and projects of any kind and the concept of multidisciplinary groups is introduced in the school. Despite the fact that the different departments of the school did common projects, such as the Sommerfeld house, the development of the project was not really common since each department worked separately.

To conclude, individual work was mainly the way products were designed in the Bauhaus, making it different from current practices. However, both, in the development of individual style based on similar principles that current engineering practices (e.g., modularity, relationships between parts...), and in the

forming of multidisciplinary groups, similarities to present industrial design and engineering can be found.

#### 4. Design as a driver for innovation and evolution

Design has been proven to be useful for more than just solving determined problems. One of its most relevant values is the possibility of deep changes that can be made in society, industry, and everyday life. Not only because design is inherently future oriented (Gordon, Rohrbeck, & Schwarz, 2019), but because it has proven that it can be a great driver for innovation and human evolution. The Bauhaus was a clear example of this, and it will be used to show how design can have a relevant role in creating the path to radical and durable change in diverse areas, from industry to everyday life.

The issues that were tackled in the Bauhaus were more related to the societal problems and requirements of the moment and generally trying to influence the manufacturing industry to create a change in the way of working (Bazzara, 2015; Hochmann, 2002). Therefore, the way of working inside the institution cannot be considered as consciously future oriented, in contraposition to current problem solution focuses that look into the needs of the far future to understand the needs of the users and their expectations (Gordon, Rohrbeck, & Schwarz, 2019). However, the effect of the school, even during current industrial design, showcases its innovative essence that has lasted almost a century.

One of the innovations that had a greater impact was responsibility of Marcel Breuer. Metal furniture, which had no precedent within the home, was only accepted for garden furniture, cafes, hospitals, prisons or dentists, and not found suitable for a living room. However, Breuer, with his creation of tubular steel frame chairs, established the concept and technology to mass produce metal home furniture. In this way, he transformed the use of an existing technology to meet his goals. His Wassily armchair, which is already an icon of design, served as a

reference for many designers, who in the next 2 years created furniture based on tubular steel throughout Europe, and that can be seen in the Der Stuhl exhibition in 1928 (Benton, Benton, & Scharf, 1975). Examples of chairs using said material were designed by Mies van der Rohe, Mart Stam or Gerrit Rietveld, among others. The importance of the use of this material lies in the fact that it facilitated the structural viability of the cantilever in the chairs. Together with the success of the lighting designs created by Marianne Brandt and Christian Dell, it was also shown that industrial aesthetics had a place in homes (Naylor, 1985). The revolution Breuer created by implementing this material in furniture for home inspired other designers to implement new materials related to industry in the same products. This way, the concept was further innovated by using fibre glass and plastic, making industrial aesthetic more present in houses (Poon, 2019).

An example of a product that changed the materials used for a purpose, in this case the purpose being reading, was the Kindle. When Amazon introduced this product in 2007, they didn't only introduce a new gadget but disrupted the action of reading itself, as well as the publishing market (Pierce, 2017). Users would now be able to read thousands of books anywhere as well as download them. Even though the kindle, or e-book, never surpassed printed book sales (Grady, 2019), it created a new market worth of billions of dollars that is still increasing its worth (Statista,2021).

As mentioned above, the long lasting innovations in industrial design practice were not only carried out by Marcel Breuer. Marianne Brandt and Christian Dell were able to also increase the acceptance of industrial aesthetic when it came to home lighting design. As introduced in the second section of this article, Marianne Brandt, with the help of Christian Dell, carried out an advanced research during the 1920s on the topic of lighting in offices and factories. This research was then used to demonstrate that industrial looking lighting could be implemented at home (Naylor, 1985, p.146). This way, Brandt and Dell created a change in the general public's opinion around industrial aesthetics, creating new and lasting opportunities for design, not only in means of geometry and shape, but also when

it came to materials and colors. Today there are many styles that have been enriched by their contribution, and offer an industrial aesthetic as a distinctive feature of design.

The best current example of how design is able to create long lasting innovations, not only within the design field but also in other fields, is the Iphone presented by Apple in 2007. “The Iphone laid the foundation of the modern smartphone” (Eadicicco, 2017, para.3) and established a new way of understanding communication as well as accessing information (Eadicicco, 2017). With its new approach, the Iphone did not only shift the phone industry but transformed industries like photography, advertisements, software development and distribution, creating ideas that are still shaping the industry today (Molla, 2017). With the new design, Apple shifted the industry from keyboard-focused to screen-centric, provided a new understanding of user-centric interface design, and with their new multitouch control system, they established new principles on how we interact with phones(Frommer, 2011).

In sum, even if a designing process is not oriented to solving a future problem, it can end up creating a long-lasting effect on society and industry, as this section has proven. Industrial aesthetic within homes is still trending today, so it can be said that the effect Brandt, Dell, and Breuer created was not temporary. In addition, other long-lasting achievement of the use of these materials was the adaptation of production methods that were previously used for other resources and that have become established in the industry. In this way, in this section it was seen how innovative solutions can influence the international context, generating new trends that are maintained for a long time.

## 5. Conclusions

In concluding the analysis, the research brought up some insights in the actual similarities between the industrial design carried out inside the Bauhaus and the

one from current global practice. Even though judging the amount of influence the Bauhaus would have had in current practice, coming up with similarities is rather easy and, therefore, some relatedness is inevitable.

When referring to the study of context, it is clear that the evolution of the school to a more industrial focus also increased the similarity with current practice. Here, Marianne Brandt's work is relevant when showcasing how the involvement of users during the design process can have beneficial outcomes, as seen later in the increasing acceptance of industrial aesthetics. The implementation of social needs and laws that defined or constrained the design space, both by Meyer and by Breuer, are also translated to diverse practices of the current design process. However, it cannot be stated that the Bauhaus had a direct influence on the consideration of context as it is understood nowadays, since the similarities are just found in determined cases, and not in the core principles of the school.

As analysed in the third section of this article, the number of designers involved in a design process is quite different when comparing the Bauhaus to current industry. Individual practice was the major focus at the German institution, while current practice focuses more on multidisciplinary groups that collaborate to combine different approaches. Therefore, the main difference relies on how individual perspectives have nowadays been relegated to a position of lower importance when comparing to the influence in Bauhaus designs.

Lastly, the ability of design to create long-lasting impact on society and industry has been exemplified by some examples from the Bauhaus, as well as current designs. The future driven essence of design enables coming up with creative and new solutions to existing or predicted problems. This way, design can, and is being used as a driver force to implement innovation in diverse areas. Starting from material usage to increasing acceptance of new technologies or practices (e.g., AI, VR...) design can be used to ease the path to implementation or to showcase and support deep innovative changes.

It can be said that the Bauhaus used ways of working that are still maintained today. Although, it does not seem legitimate to say that this school was the only motivating factor to use context as a constraint to design space, or to introduce industrial aesthetics into the home, it is undeniable that its impact to this day is still remarkable. Both by companies such as Apple or Ikea, which still use ideas instilled in the German school today, as well as by the commercial success that some of the creations of the Bauhaus designers continue to have, or the methodological way of teaching design based on tools and not to created styles, the ideas of the school continue to have a great relevance in current industrial design.

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