

Through the looking glass of inspiration:

Case studies on inspirational search processes of novice designers

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Abstract: When engaging in new and ill-defined problems, designers are challenged with many ambiguous moments, such as finding how to start. This is particularly the case with novice designers. Thus, for designers, selecting and organizing information have a profound impact on the generation of creative solutions. However, much is not yet known regarding the selection of inspirational sources and how they influence the generation of ideas and the outcome of the design process. This paper presents the results of the analysis of case studies on the design process of eight novice designers, focusing particularly on their inspirational search approaches. Several units of analysis were collected and investigated: design students' daily work notebooks, intermediate and final written reports, and individual interviews. Whilst all novice designers chose to tackle the design brief in different ways, similarities were found regarding the patterns of search of inspiration. These case studies reveal that while searching for inspiration is mostly an unconscious process, designers would benefit from making it a conscious and reflective approach. The paper promotes a change in the perception of the inspirational search processes, which can have important implications for design education.

Key words: *Inspiration sources, inspirational search process, novice designers, case studies.*

1. Introduction

Asking people what inspires them will most likely lead to vague answers such as “*anything can be inspiring*” or “*I get inspiration all the time, everywhere*”. The value of inspiration sources and their ubiquitous presence in design is often acknowledged by designers and in research (e.g., Yang, Wood, and Cutkosky, 2005; Eckert and Stacey, 2003). Designers, regardless of their level of expertise, take advantage of what surrounds them to open the solution space and to stimulate the generation of creative results (e.g., Goldschmidt and Sever, 2010).

The array of possible inspiration sources can vary across different categories: from internal stimuli (i.e., designer's internal representations) to external stimuli, which can be further divided into different representational modalities, such as pictorial, verbal, sound or three-dimensional stimuli (Eastman, 2001). Therefore, we can define inspiration sources as any entity consciously or unconsciously retrieved from one's memory or from the outside world during (or outside) a design process. These entities are likely to have more or less impact on the ideas generated, ultimately influencing the design outcome, directly or indirectly. This definition of inspiration can contain tangible entities but also digital artefacts such as Internet pages, or even intangible entities, for instance, talking to a friend. Therefore, we consider that, when designers are gathering information, they can use it

as inspiration for framing the problem and defining the solution space. In essence, we consider any piece of information as being potentially an inspiration source, as long as it becomes meaningful to the designer.

According to Goldschmidt and Sever (2010), designers can encounter inspiration sources in an intentional, unconscious or even accidental manner. In this study, we refer to both active search and passive encounters with inspiration entities. Searching actively refers to intentional practices, driven by specific goals. Oppositely, passive search applies to accidentally or unconsciously stumbling upon relevant inspiration sources, without a conscious goal or intention. Thus, active and passive search for inspiration can be distinguished by how deliberate the searching process is.

Seeking support in inspiration sources becomes particularly important when designers start a new design problem where the requirements are unclear. Novice designers are especially affected by such ambiguity, as they tend to be unstructured on their attention focus, struggling to perceive what is relevant (Kavakli and Gero, 2002). Therefore, the identification, selection and transformation of inspiration sources during a creative problem-solving task can have a profound impact on the generation of innovative solutions. Nevertheless, finding and using inspiration sources can be a wandering and muddled process, where it is unpredictable whether the use of a stimulus source will be of benefit or not to the generation of a creative design.

Little is still known about the inspirational search processes of designers and how it influences the design outcome. This study aims at understanding the inspirational search processes novice designers undergo while involved in a design task. The main research question that guides this study is the following:

- *Which processes do designers employ while searching and using inspiration sources for a design problem?*

In this paper, we present an analysis of the case studies on the inspirational search processes of eight novice designers. We have two goals: firstly, to investigate how can these processes be described; secondly, to understand if such processes can be supported to increase the likelihood of designers generating more creative solutions. We strive to help designers in engaging in a deliberate and reflective process of finding and using the most advantageous stimuli, instead of blindly chancing upon an unlimited number of potential inspiration sources.

In the following section, we continue with the background review initiated in section 1 (Introduction), by presenting a brief overview of additional relevant research on the use and influence of inspiration sources in design. In section 3, we describe the set up of our study. Section 4 reports on the results obtained from the analysis of the inspirational search processes of the novice designers. Finally, in section 5 we discuss our findings and conclude with implications for idea generation and design education.

2. The use of inspiration sources in design

Designers' idea generation is influenced by two basic factors: formerly acquired knowledge and the problem definition (Liikkanen and Perttula, 2010). However, these are not the only components that play a role in designers' creative outcome. The process of gathering information becomes also crucial, especially when designers have limited knowledge about the task at hand or when the design brief is too vague. According to Purcell and Gero (1992), designers can retrieve pertinent knowledge for their design activities from two sources: one of them is gaining knowledge from random and serendipitous encounters in the design environment; the other refers to knowledge acquired deliberately. However, the process of forming new knowledge requires more than knowing where to find it. When designers choose to apply a specific piece of information in their design project,

they undergo a complex process, in which information is perceived, evaluated, selected, transformed and rearranged, to finally generate (possibly new) knowledge (Yang, Wood, and Cutkosky, 2005).

Within the universe of possible sources, designers prefer to use visual representations (e.g. Gonçalves, Cardoso, and Badke-Schaub, 2011), especially examples where the form and function is in evidence (Herring *et al.*, 2009). Conversely to the extensive use of visual stimuli, textual stimuli, for instance, seem to be disregarded as a potential inspiration source (Goldschmidt and Sever, 2010). Visual stimuli are mostly used when designers are trying to understand the context of a problem and to establish a reference point for how the problem has been addressed before. Many researchers investigated the practice of looking at existing solutions (also referred as within-domain examples) and demonstrated that it can lead to *design fixation* – an unconscious tendency to reuse elements and/or principles from existing examples, without considering how suitable they are (Jansson and Smith, 1991; Purcell and Gero, 1992). Although the inadvertent use of visual examples can narrow the solutions space, it is still widely practiced. In contrast, another practice is to search for stimuli outside the scope of the problem at hand (i.e. between-domain examples), to explore different perspectives. Coincidentally, although relevant between-domain stimuli might be more difficult to identify and retrieve, as the connections between source stimuli and target problem are not obvious, their use can lead to more creative outcomes (e.g., Christensen and Schunn, 2007).

This short review raises an additional question about whether designers are hindering their creative process due to their unreflective choices of what can be considered appropriate stimuli. In this study, we aim to understand novice designers' inspirational search processes, by analysing which procedures they employ, with which level of structure and organization, and how much reflection is involved in such process.

3. Set up of the study

We have chosen the case study approach to capture a thorough representation of the design process, focusing on inspirational processes. We have collected and analysed the design process of eight novice designers, across a number of units of analysis: designers' daily work notebooks; individual assessment of their design skills and creativity; intermediate and final reports; and, individual interviews. Thus, not only we cover a retrospective analysis of their design process via the interviews, but we also include a more complete perspective, with the daily notebooks and reports. Analysing the design process of these designers from different angles should enable a more accurate representation of the inspirational search processes and development of creative ideas they go through.

3.1 Participants

During a period of ten weeks, we followed the development of the final project of eight 3rd year bachelor design students, from an Industrial Design Engineering course. They are identified by the following letters: A, D, F, M, N, P, R and T. The novice designers worked on a project for the last design course of their bachelor degree ('Bachelor Final Project' course) within the context of an existing company, Promolding BV, located in The Netherlands. The company is specialized in the development and manufacturing of polymer solutions. The students received an open-ended design brief: "Create a product which can be produced by injection molding and can potentially open other markets for Promolding." The students had to identify interesting directions for the development of polymer products and to design concepts to present to coaches and company representatives. The project was concluded with a final and well-developed concept.

3.2 Daily work notebooks

Designers' notebooks can provide a source of informal information, which was captured as it was created, with little editing and informal structure (Yang, Wood, and Cutkosky, 2005). These notebooks can contain every kind of information, partial or finalized, from doodles to finished ideas, and also 'to do' lists and early requirements. The language used in notebooks displays a quest for searching for the right terms, determining the directions the design adopts. Thus, the analysis of notebooks can provide an authentic and unprocessed perspective of the design process, which can be lost while formalizing the information into final presentation reports. However, daily work notebooks might present preliminary and incomplete results, which can only be entirely observed in final reports. Along with the notebooks, the students received stickers with two labels: 'Sources of Inspiration' and 'Ideas'. The students also received instructions on how to use these stickers. We asked the students to differentiate the notebook pages with stickers, by signaling each page meant for the generation of an idea, and the immediate following page with a description of the inspiration source, which might have been in the origin of the idea. We also gave them different colored stickers to mark the progression of ideas (to distinguish between discarded concepts and concepts to follow up).

3.3 Reports

The intermediate and final reports are considered formal design information, characterized by being structured and presenting complete ideas, such as conclusions on a project, final concepts and computer drawings (Yang, Wood, and Cutkosky, 2005). In terms of language, these reports present the final form of the design discourse. The analysis of both informal (notebooks) and formal (intermediate and final reports) design information can offer a more complete perspective of the participants' processes. The participants did not receive instructions for the production of the reports. At the end of the project, we collected copies of all the elements the students produced.

3.4 Interviews

The semi-structured interviews were carried out at the beginning of the embodiment design phase, as that moment was useful to encourage the novice designers to reflect on their process. Each interview was audio recorded, individually, and took one hour on average. The interview script was organized into four sections: background information (where we asked about their educational experience and perception on their design skills); overview of the project (where we inquired about their design process and about methods they might have used); analysis on inspiration sources (where we asked on their use of inspiration sources throughout the project, by asking where, when, who and what do they search for when looking for inspiration); and reflection on the experiment (in which we aimed to promote a reflective moment on the use of inspiration sources). The students were also encouraged to share their experience in other projects to complement the analysis of their design process.

4. Results

The following section presents the results of interviews, which were transcribed and coded, and their results were complemented with the analysis of the daily notebooks and reports.

4.1 Variety of inspiration sources

The variety of inspiration sources that the participants indicated reveals their widespread use in these design projects (Figure 1). As we anticipated, when inquired about inspiration, some participants replied vaguely to the questions, for instance: “everything” and “all day life” could be inspirational and that they search it “all the time”. As participant N referred: “I think always. I’m always up to [search for inspiration]. And... Maybe this is stupid but anywhere, you can use everything as inspiration”.

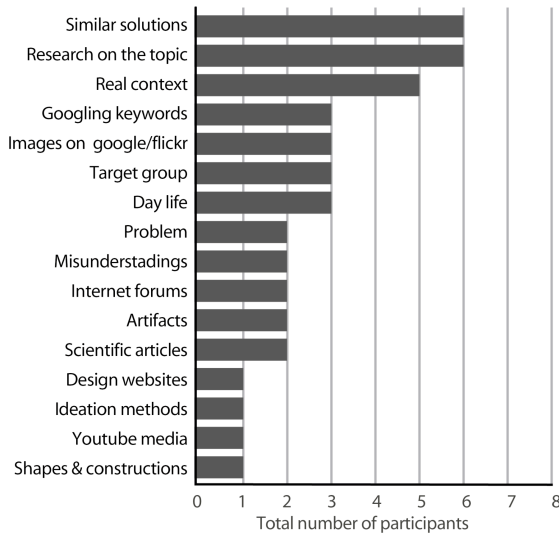


Figure 1 a. Answers to *what* do you search for to get inspired?

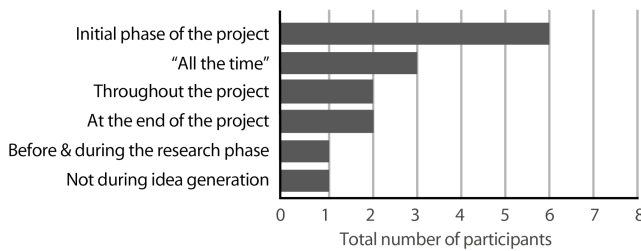


Figure 1 c. Answers to *when* do you search for inspiration?

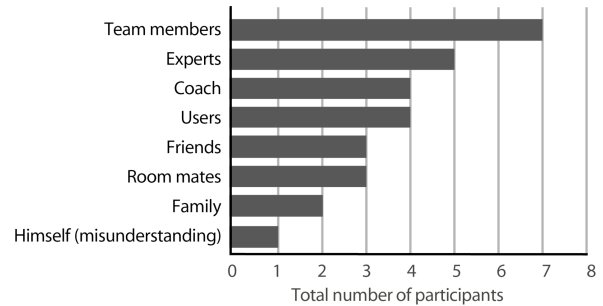


Figure 1 b. Answers to *whom* do you ask for inspiration?

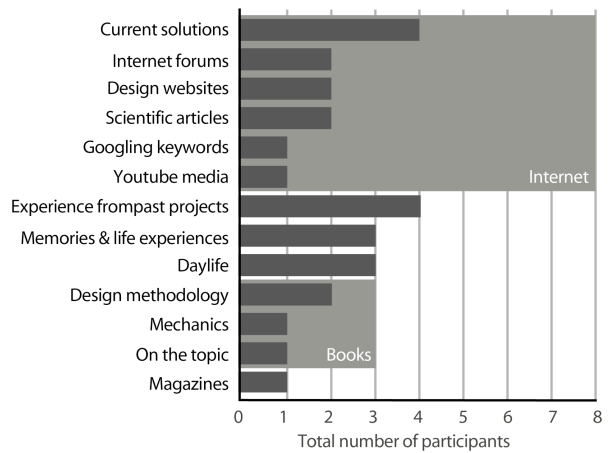


Figure 1 d. Answers to *where* do you search for inspiration?

Figure 1. Answers to “*What* (1 a.) / *Whom* (1 b.) / *When* (1 c.) / *Where* (1 d.) do you search for inspiration?”

Once inquired in detail about their use of inspiration, all participants reported searching for it in several moments of the design process (Figure 1 c.) According to six of our eight participants, inspiration sources are mainly obtained in the early phases of the design process. Curiously, none of the eight participants indicated the idea generation phase as their usual moment to search for inspiration. In fact, one of the participants explicitly stated that he does not search for inspiration during idea generation, which is precisely the phase creativity research normally focus on, especially in the field of inspiration sources.

Interestingly, some of the participants indicated they do not consider the search for similar solutions or information on the problem as inspiration. Instead, they refer to it as researching the problem in order to define it. Nevertheless, many of the participants’ ideas were created in the early phases of their process, while searching for information about their chosen topic. Therefore, the information the participants searched for in the task clarification phase ultimately had an impact on the generation of their ideas, thus, it became inspirational. The participants used the terms *searching for information* and *searching for inspiration* interchangeably and it was difficult for them to distinguish between both activities.

4.2 Seeking or waiting for inspiration

As previously indicated (Section 4.1), participants reported the initial stage of the design process – the task clarification phase – as the moment where they searched *actively* for inspiration sources. Nevertheless, the *passive* encounter with stimuli, which might have had an impact during the conceptual and embodiment design phases, still happened, as it was supported by the analysis of the participants' notebooks. Besides sketching their ideas, we asked our participants to write a short description of how the idea emerged, using keywords or by collecting visual exemplars of the inspiration used. Therefore, it was observable that inspiration sources were also searched for and used during the generation of ideas and development of concepts. Likewise, analysis of the interviews and notebooks also revealed that when the participants received the (open-ended and vague) design brief, they actively searched for information that could help them define the scope of the problem. To do this, the participants subdivided the problem into manageable parts. Hence, active search of inspiration answered specific sub-problems and not the main problem. However, passive encounters with meaningful information that contributed to the design process happened frequently and in a serendipitous way. As stated by the participants, inspiration sources found passively initiated an active search, normally in the Internet, in order to learn more about them. Figure 2 visualises this interdependency process between passive and active search.

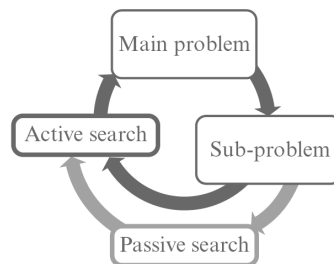


Figure.2 Diagram illustrating the interdependency between passive and active search of inspiration sources

4.3 Searching for close and easily accessible inspiration sources

On the medium preferred to search for inspiration, all participants referred to Internet. This comes in conformity with previous research (Gonçalves, Cardoso and Badke-Schaub, 2011; Mougenot, Bouchard, and Aoussat, 2008). Interestingly, using Internet as a resource to find all kinds of information and as an inspirational medium seems to be a recent approach and the favourite of the younger generations of designers. Past research showed that magazines were previously considered the traditional medium used by professional designers to gather information (Mougenot, Bouchard and Aoussat, 2006). In general, the participants indicated that browsing the Internet is one of the first steps while initiating a new design project. Participant F presented the reasons for such intense use: *“Well, it’s the easiest access, you know? I’m not much of a magazine person... not that I have a big shelf full of magazines that I can go through. So, yeah, Internet is free and quick. A lot complete and really versatile”*. The information searched by our participants when using the Internet went from visual examples of current solutions, to textual information on the field of the problem or general design websites (on the contemporary design trends, which are not necessarily related with the problem at hand) (Figure 1 d.).

Six of the participants reported searching for similar solutions to the problem at hand in the earlier stages of the design process, especially during the task clarification phase. The participants expressed that they do not consider themselves inspired by existing solutions or do not seek them for that purpose. Alternatively, they present several

reasons for such priority given to within-domain stimuli: to obtain an overview of the context of the problem and which guidelines should the designer follow; to narrow down the problem; to understand the disadvantages of the current products and use that knowledge to create better solutions; and to avoid “*reinventing the wheel*”.

The analysis of the notebooks, reports and interviews indicated that there was limited active search for between-domain stimuli. Some participants referred that they could find inspiration outside the scope of the problem, but mainly dependent on random encounters. A small number of participants tried to employ ideation methods that led them to explore between-domain stimuli. For instance, participant R used the Analogies method to establish relations between his design problem and a distant field, by transferring features from the source example into a possible solution. In this case, the target problem involved the lack of oxygen when an avalanche occurs and the distant source was the type of oxygen equipment used by divers. Nevertheless, the use of between-domain stimuli via ideation methods was a rare practice across the participants.

4.5 Searching for inspiration in people

All participants referred that talking with people was also an inspiration source. Seven of the participants indicated that they gathered inspiration from discussions with fellow design students (see Figure 1 b.). Moreover, experts, coaches and users were other figures referred by the participants as inspirational. According to the participants, discussions with experts and users on the topic of the problem happened mainly during the task clarification phase, when the participants actively searched for further information that could help them identify and isolate the problem. On the other hand, conversations with colleagues and the course coach happened actively when the students were detained in their design process, but passive encounters and discussions also occurred frequently at different moments of their project. Through the analysis of the notebooks and interviews, we observed that external people, especially colleagues and the coach, directly influenced many initial ideas and even the final concepts. With this experiment, some of the participants realized for the first time how dependent they are on the support provided by the coach and colleagues. Participant P indicates: “(...) *this is the first time I realize how much inspiration I get from a teacher. Because normally they say it, and I just accept it and use it as my own. I never really think from where I got it from*”. The majority of the participants expressed that they missed the opportunity to discuss their ideas with colleagues in this individual project and that they preferred group work.

4.6 Advantages and disadvantages of reflecting on inspiration sources

When questioned on whether they reflected on their process and on the origins of their ideas, half of the novice designers reported not taking time for it. The other participants indicated that they occasionally have reflective moments, but normally unconsciously. Interestingly, this comes in agreement with Schön’s description of reflection-in-action (1983), an explicit reflection on the design process. These reflective moments were motivated by evaluative phases of their concepts, by exceptionally striking ideas or by their contemplative personalities.

Due to the set up of this case study, the participants had to sketch their ideas and respective sources in their personal notebooks, which required an immediate moment of reflection. Figure 3 illustrates two pages of the personal notebook from one of the participants, displaying a sketched idea and its inspiration source. This task required an extra step in their design process and many of the participants reported that this reflective moment was disruptive. Active reflection, coincident with the generation of each idea, was considered to delay the flow of production of ideas, but not in a detrimental way. According to the participants, ultimately, the immediate reflection on their inspiration sources did not affect their project, as strategies were employed to capture ideas

without losing track of their inspiration sources. Some participants chose to give shorter explanations or to jump the page meant for reflection on the inspiration sources and complete it later. Participants were asked to rate on a 1 to 5 Likert scale (1 = Strongly disagree; 2 = Disagree; 3 = Neither agree or disagree; 4 = Agree; 5 = Strongly agree) in how far they agreed that the reflection on their use of inspirational sources *helped* their design process. Conversely, the participants also rated how far they agreed that these reflective moments *disturbed* their design process. Although during the interviews some of the participants considered these immediate reflection moments disruptive, the results on the ratings of the two Likert scales showed another perspective. On average, the participants rated that they generally disagreed that the reflection disturbed their design process ($x = 1.88$, $SD = .991$), and they generally agreed that it helped them ($x = 3.63$, $SD = .518$). In fact, the participants confirmed that reserving time to reflect throughout their inspirational process could bring benefits. As possible advantages, participants indicated that this reflection helped them realize how much their ideas were dependent on the input of others, or raised the awareness that a more conscious choice of inspiration can help the development of their design process. Participant P indicated that “*because [he] was thinking about inspiration, [he] may have got another idea*”, which reflects an unexpected but positive effect of reflecting on the inspiration sources. The reasons the participants presented to explain their limited reflection, specifically about where their ideas came from, were mainly dependent on the cognitive load this action requires. In regards to this, participant A replied “*that’s really easy not do it, it’s a lot of thinking*”. Although it was indicated that reflection on the inspiration sources – at the moment of each generated idea – could be considered disruptive, participants raised concerns on the usefulness of reflection when the project is finished. Reflecting on the moment can slow down the design process, but post-project reflection might not have immediate value, and learning experiences might not be incorporated in the next design project. This raises the important question of when is the most opportune moment to reflect on the design process.

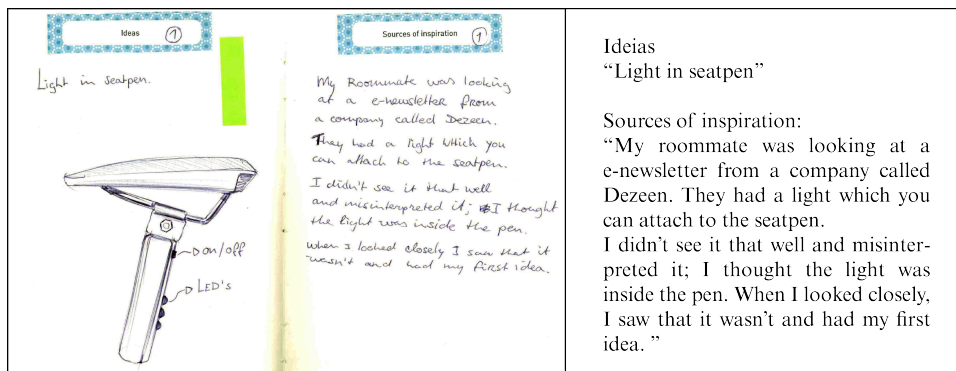


Figure.3 Participant P's notebook page: on the left, the participant sketched the idea; on the right, the participant added a description of the idea's origin. The green sticker on the left page indicates that the participant considered the idea adequate to answer the problem.

4.7 Search and use of inspiration sources within several phases of the design process

The analysis of the interviews, together with the careful examination of the personal notebooks and reports, enabled the development of visual models portraying the design process of the participants in this project. For the development of these visualizations, we used the Systematic Design Model, by Pahl and Beitz (1984), as starting point. Figure 4 illustrates the visualization of the design models of two participants: Participant P and R, which we use as cases in point. In this visualization, we can observe that both students went through the same general phases

(task clarification, conceptual, embodiment and detail design) and the same three presentation moments, required by the coach of the course. However, participant P had a much shorter task clarification phase, as this student quickly arrived at a project direction, which he introduced in the first presentation. Participant R dealt with a longer task clarification phase, with iterative moments and constantly redefining the project direction, even after the first presentation. We have identified that, coincident with the task clarification phase, there was one first cycle of inspiration search, meant to define the problem. *Inspiration for problem definition* enabled the participants to explore and understand the problem, which is normally characterized by searching for contextual information and similar existing products. Participants P and R started the conceptual design phase at different times in the project, but in both cases there was overlapping with the previous phase. Participant P started generating ideas even during the task clarification, which extended the conceptual design phase from the first to the second presentation. Consequently, participant P produced many more ideas than participant R, who had a more condensed idea generation. With the constant search of information on the problem, participant R changed his direction even after the first presentation, to better refine it. During the analysis of the conceptual design phase of the participants' projects, we have identified another cycle of inspiration search, in which the goal was to identify solutions for sub-problems of the main problem. In general, participants indicated that, while generating ideas, they are creating multiple ways to solve the problem, sub-dividing it in an approachable manner. Thus, we refer to this cycle as *Inspiration for sub-problems*, where participants searched for existing solutions, by discussing their ideas with people or by encountering inspiration sources passively.

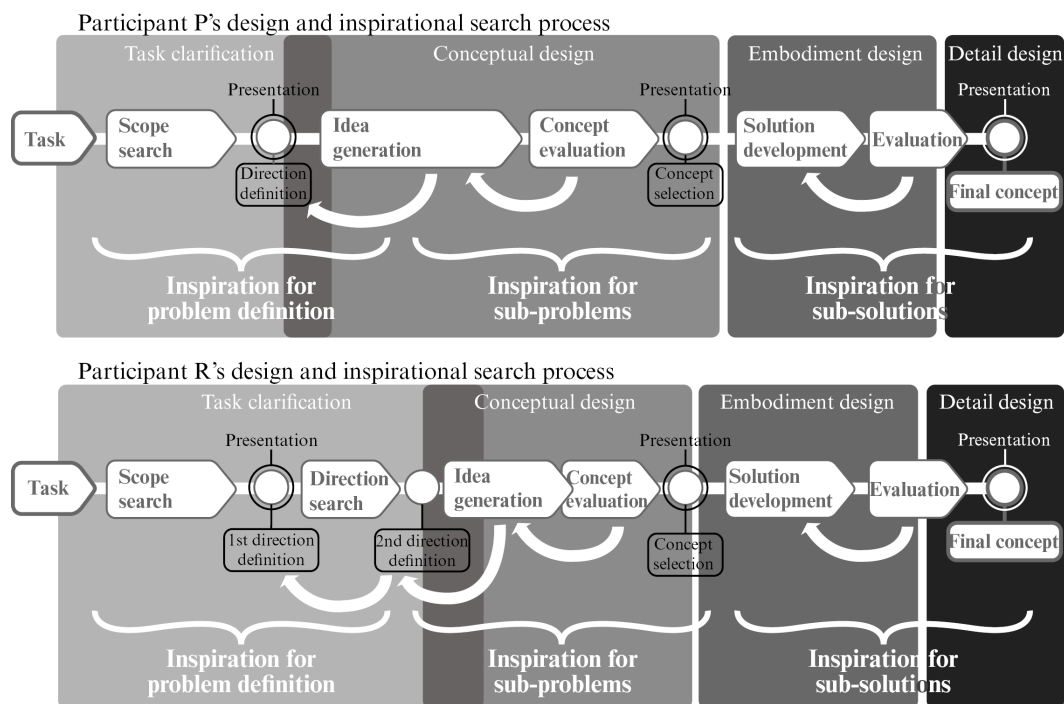


Figure.4 Participant P's and R's design process and the three moments of the inspiration process: Inspiration for problem definition; Inspiration for sub-problems; and Inspiration for sub-solutions

In the second presentation, the students had to opt for one concept and proceed with the embodiment and detail design. In these phases, which were not clearly distinguished in this project, the participants had to fully develop the chosen concept, by creating technical drawings and a three-dimensional model, estimating the production cost

and retail price, materials and construction. Participant R had a slightly longer and diligent development of the concept than P. Once again, it was possible to recognize another cycle of inspiration search, in which the participants continued to search for inspiration but for a different purpose. In the *Inspiration for sub-solutions* phase, the participants used inspiration sources to refine the chosen concept, to fully develop it. Participants searched actively for, but also encountered passively, inspiration for sub-solutions that could help improve the final concept. The differences in their design process and final concept resulted in a difference in their final grades: Participant P obtained 6.5, while R achieved a 7.5 (on a 1 – very poor to 10 – excellent, grading scale).

5. Discussion and conclusions

Our findings concern solely the analysis of the design process of eight novice designers who took part in this study. Nevertheless, general patterns emerged from these case studies, which might show similarities with other novice industrial designers. Considering our results, we developed a flowchart to illustrate the type of inspirational search process that designers seem to experience in different phases of a design task (Figure 5).

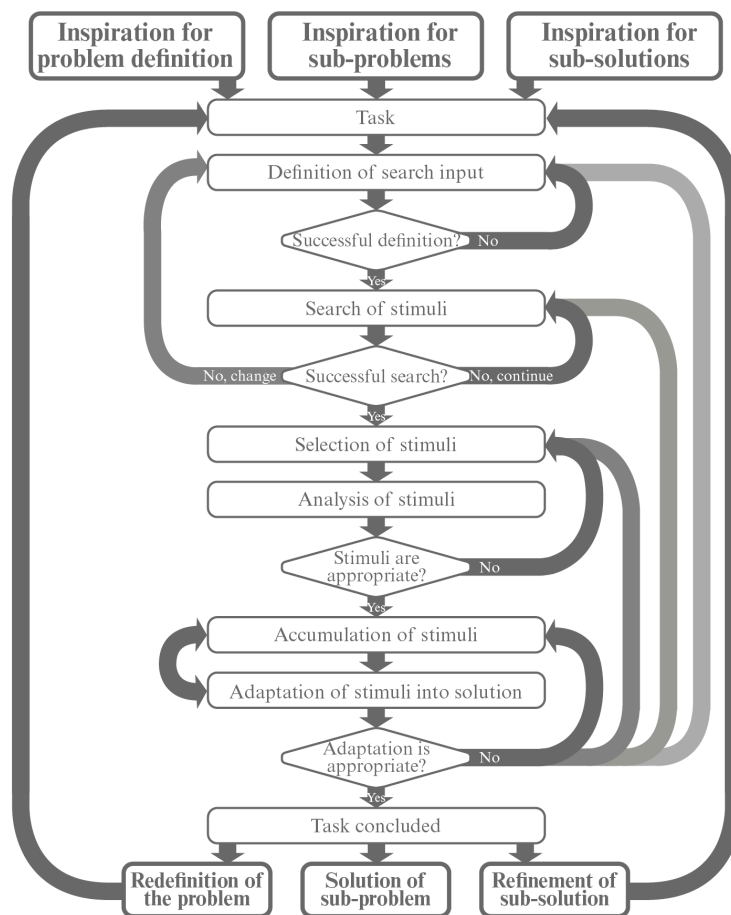


Figure.5 Visualization of the inspirational search processes that could be observed at different moments of the design process (visualization adapted from Eckert and Stacey, 2003).

This flowchart is based on the analysis of the design processes of the eight participants and it shows the cyclic processes that occur repeatedly when designers use inspiration sources to tackle a task or a sub-task. We have identified different goals for each cycle of the inspirational search processes, which depend on the phase of the

design process: searching for inspiration sources to define the problem, to explore solutions for sub-problems and to refine the solution (by sub-dividing it). The inspirational search process is initiated when the designer needs to answer a problem or part of it. The designer tries to make sense of the task, by formulating it and defining the search inputs that focus the attention on a specific direction. Designers search for inspiration sources according to these search inputs, which are triggered by the individual formulation of the task. Once the designer successfully defines search inputs (by immediately thinking how to approach a problem), the search for stimuli that match the search inputs definition begins. However, whilst searching for the most appropriate stimuli the designer may arrive at unsuccessful results, in which case they can choose to continue searching for an appropriate stimulus or to change the search input. With each selection of a stimulus, an analysis follows to assess if it corresponds to the designer's expectations. The designer can then choose whether the stimulus can be incorporated and adapted to answer the problem at hand, or to store it (in the designer's memory or in a physical/digital collection) for another occasion. The last step is to adapt the stimulus in an effective manner to answer the goal of that specific cycle of the inspirational search process, which could be to redefine the problem, to find solutions for a sub-problem or to refine a sub-solution. Each cycle will lead to a different reformulation of the task.

This process occurs multiple times during a design task and it is normally an unconscious process. These novice designers selected and used a number of inspiration sources without considering the impact in their outcomes. It is through reflection that designers can learn from experience and build on their expertise. However, novice designers are untrained in reflecting, as it is a difficult task and they are not encouraged to do so during their design projects. Reflection – on the design process as on the inspirational search process – is essential to build expertise, but the moment when it should be applied within the design process still remains unclear. As our participants reported, reflecting on the process during the day-to-day project can be disruptive. Yet, reflecting at the end might not have direct impact. We recommend that reflection on the process should be applied after the conclusion of specific phases of the project, but before a new part of the task is initiated. We claim that active reflection on the use of inspiration sources has a beneficial impact in the design process.

Another important aspect raised by this study is the focus on within-domain stimuli. The tendency to largely use this kind of stimuli when searching for inspiration might also be a reaction to the vagueness of the design brief. As the problem given to the participants enabled the exploration of any kind of field and led to very long task clarification phases, the participants relied on the search of similar products as soon as they decided on their personal design directions. Due to the complexity of the problem, the participants spent an average of four weeks (of the ten weeks of the project) to grasp the problem and fully define their goal. However, research has extensively demonstrated the advantageous use of between-domain stimuli in creative design (e.g., Christensen and Schunn, 2007). Therefore, novice designers might be blocking their own creativity by the unreflective use of within-domain stimuli in their inspirational search processes.

We observed that these novice designers were considerably dependent on external feedback from peers and coaches. In this bachelor programme, this project is one of the few courses which promotes individual work and until then, our participants had very little experience working alone in a design project. Relying only on their own skills seemed to be an unfamiliar situation, which most of the participants struggled with. This can be an indication of how novice designers are unprepared to work individually during a design project and how dependent they might be on external feedback. The initial years of design education in this bachelor programme focus on group work, which enables students to explore their role within a team, to learn how to negotiate and to

improve their performance by relying on one another. However, personal skills and confidence are preferably practiced in individual projects and it seems that these students had little space to train these aspects. Arguably, this might indicate that the early years of design education should balance the quantity of group and individual projects, in order to promote the designers' full development.

To conclude, we claim that searching for inspiration sources is a cyclic process that designers engage in multiple times during a design process, and which take different forms depending on the goal(s) driving such pursuit. This process can be better supported by active reflection, thus potentially enhancing the development of creative ideas. An understanding of the impact of the inspirational search process in the early years of design education can promote the full development of designers' set of skills. Further research will continue to explore the influence of conscious inspirational search processes in design creative outcomes.

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