

Towards a Smart Visual Research Method for Visual Communication Design Education

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ABSTRACT

Higher education in Visual Communication Design (VCD) in Turkey has faced significant challenges as a result of recent disruptive events, particularly the pandemic, resulting in shifts in learning models. The transition to online education resulted in lower engagement, attendance, and project quality. In response, the goal of this research is to create a smart and adaptable approach to VCD education that thrives in a variety of scenarios. The study emphasizes the role of the ideation phase of the design thinking approach in fostering innovation and engagement. It compares current ideation tools, specifically existing method decks and play card decks, to assess their ability to foster essential skills (creativity, innovation, problem-solving, sustainability, ethics, and collaboration). Their limitations, however, become apparent during the complex concept development process of visual communication design. The proposed 5W/1H approach appears to be a promising alternative, as it supports designers' essential skills while aligning with the field's specific needs. The study bridges the gap between designers and users by framing visual communication design as a reflective practice. This model addresses language, defining medium, and problem definition issues that have been identified in existing tools in the field of visual communication design. The incorporation of the proposed approach represents an important step toward holistic, user-centered design capable of navigating complex challenges.

Keywords: Visual Communication Design Education, Concept Development, Design Thinking

1 Introduction

Visual Communication Design (VCD) higher education has recently faced unprecedented challenges in Turkey, particularly during the pandemic and other disruptive events such as the Kahramanmaraş earthquakes in 2023. The shift to online learning and subsequent modifications between educational models have largely impacted the quality of VCD education. The transition to entirely online learning resulted in a significant decrease in student engagement, lower attendance rates, and a decrease in project quality. In-class engagement remained a challenge during online sessions. As a result, it became clear that an adaptable, smart, and sustainable approach capable of thriving in diverse educational scenarios, whether online, hybrid, or face-to-face, is urgently needed. In response to these challenges, this research seeks to develop a smart approach that can function effectively in any situation and improve the VCD learning experience. In this context, design thinking emerges as a powerful approach in the field of VCD education, with the aim of constructing a smart future. It is a cognitive process characterized by non-linearity and iteration that enables visual communication designers to effectively address design challenges, understand user requirements and interests, generate innovative concepts, and evaluate prototypes [1]. It encourages the development of problem-solving abilities, creative thinking, and innovation, all of which are crucial for addressing the complexity of VCD education. The VCD program at Istanbul Bilgi University acknowledges the importance of design thinking and incorporates it into senior-year project courses and prerequisite classes. This integration aims to provide students with the essential abilities to develop inventive solutions in a constantly changing field.



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This research frames the design thinking process around five fundamental stages: empathizing, problem identification, ideation, prototyping, and testing. The initial three stages are of significant importance, as the conceptual framework plays a crucial role in the successful completion of the production phase. The third-year *Concept Development for Design* course, which is a prerequisite for senior-level courses, places significant importance on problem identification, problem statement, and ideation methods such as brainstorming and mind mapping. The course utilizes a variety of pedagogical approaches, encompassing interactive lectures, guided discussions, in-class workshops, and student presentations. Various contemporary and conventional methods for concept development, such as *The Silk Method Deck*, *IDEO Method Cards*, *The Thing From The Future*, and *The Work Kit of Design Fiction*, are commonly employed in workshops as valuable resources for generating design briefs, scenarios, and ideation. Nevertheless, the existing tools present certain difficulties in terms of language, defining medium, and problem definition, specifically within the realm of visual communication design projects. Given the rapid pace of technological advancements, it is crucial to ensure that educators and students possess the necessary skills and knowledge to effectively navigate and excel in this evolving landscape. The objective of this study is to conduct a comparative analysis of current ideation tools and propose a new model for VCD education. Through the creation of a tailored concept development tool, the authors' objective is to provide students and educators with enduring resources that facilitate effortless adjustment to the complexities within the education environment of VCD.

1.1 Positioning Visual Communication Design

Before delving into the research details, it is necessary to discuss how design and visual communication design are defined within the context of this study. As a noun, design is defined as a plan or specification for making/creating something with a specific goal in mind. To design is a verb that means to plan/organize or create/construct something according to a plan. "Virtually the entire realm of two- and three-dimensional human production involves design, whether consciously applied, well executed, or ill considered" [2, p. 4]. The end result is always a visual organization. Designing a chair or a poster, for instance, are both acts within the design discipline. They are both concerned with visual organization. The first, however, is in the field of industrial design, while the second is in the field of visual communication design. Visual communication design is located at the intersection of communication sciences and the visual arts and includes fields such as painting, drawing, illustration, photography, and graphic design.

1.2 Visual Communication Design as a Reflective Practice

Adopting Schön's [3] theory of reflective practice as a valuable perspective, this article prioritizes dialogue and interaction between the designer and the user, facilitating a message exchange between these two actors in order for the dialogue to occur. Donald Schön [3] introduces a paradigm of reflective practice in his book, *The Reflective Practitioner*, which challenges traditional design methodologies of the time. This constructionist theory promotes design as an activity that incorporates reflective thinking. Schön's framework, in contrast to the conventional approach, does not assume predefined design problems. Instead, he depicts design as a reflective conversation in which the designer is essential in framing tasks and imagining potential solutions [4]. This method promotes ongoing introspection and consideration of the designer's role in shaping the design process. The method entails mutual understanding and learning. It is not a discussion or an argument. It is not about favoring one actor over another. One of the actors creates the message, and another actor interprets it. Successful visual communication in this context is dependent on the seamless integration of two critical components: *content* and *form*. The content contains the subject matter, story, or information that the design tries to convey to the user, whereas the form symbolizes the

skillful manipulation of numerous design elements and principles. The interaction of content and form is at the heart of effective visual messaging.

1.3 Visual Communication Designers of the Smart Future

There is an urgent need to cultivate the necessary abilities and qualities in order to prepare future visual communication designers for the difficulties that lie ahead. Firstly, *Creativity* is essential because it allows designers to conceive novel solutions that break down traditional barriers and resonate with ever-changing users. Secondly, embracing *innovation* is also critical in a period of rapid technical breakthroughs and unpredictable market trends. Designers can stay ahead of the curve by cultivating a mindset of ongoing exploration and adaptation, effectively addressing growing demands, and utilizing the potential of cutting-edge tools and technology. Thirdly, as designers face challenging concerns that necessitate analytical thinking, the utilization of research methods, and the ability to handle complex issues, there is also a higher demand for better *problem-solving* skills. Visual communication designers who improve these skills become competent at developing solutions that meet diverse users' different demands and preferences. Furthermore, *sustainability and ethics* are becoming more prevalent in design considerations, reflecting a global shift toward ethical and accountable action. Visual communication designers of the future must embrace eco-friendly materials, energy-efficient techniques, and socially responsible approaches in order to develop messages that promote positive change and sustainable development. Lastly, as the future of design becomes more interconnected and interdisciplinary, *collaboration* emerges as a vital skill. To succeed in a dynamic and interconnected world, designers must master the art of collaboration, working effectively with peers, clients, and stakeholders from various backgrounds.

2 Materials and Methods

In Istanbul Bilgi University's VCD program, the design thinking approach serves as a powerful way of integrating the mentioned skill set into design education. Educators equip students with the skills to face complex design problems and provide unique solutions by incorporating the design thinking process into senior-year project classes and prerequisite courses. According to VCD students' graduation projects at Istanbul Bilgi University, the production phase of a design process frequently fails when the conceptual framework is inadequately conveyed. As a result, in the third-year *Concept Development for Design* course, educators pay special emphasis to the first three stages of design thinking: empathize, define, and ideate. Students begin by empathizing with the user and then move on to define a problem statement within a specific context, develop the content and structure, and finally shape the message. The ideation stage becomes the message's birthplace, highlighting the critical need to define the problem statement in order to develop an impactful message. The idea is vital in such a setting. Existing tools that are used as reference materials to create design briefs include a wide range of card decks that can be used as brainstorming tools. Despite the advantages they offer, authors have encountered challenges in the design process and the outcomes of student projects. In response, the authors intend to compare various ideation tools in order to address the challenges encountered. The goal is to assess the ability of these existing tools to improve creativity, innovation, problem-solving, sustainability, and collaboration.

2.1 Card Decks

This study will examine four different card decks as ideation tools. There are two kinds: decks of play cards and method cards. The decks of play cards chosen are *The Thing From The Future* and *Design Fiction's Work Kit*. *The Silk Method Deck* and *IDEO Method Cards* are the method cards.

Play cards are used to construct design briefs or design scenarios, as well as to generate ideas. *The Thing From The Future* [5] is a card game for individuals or groups of two to six people. The purpose is to produce amusing and thought-provoking descriptions of imaginary objects in diverse future circumstances. Each round begins with participants working together to generate a creative prompt using cards. The prompt describes the type of future, the societal or cultural aspect, the description of the thing, and the emotional response it inspires. Then, based on the prompt, players write short descriptions that are read aloud without attribution. Each description serves as a design brief. The descriptions are voted on, and the winner gets to keep the cards from that round. *The Thing From The Future* has 108 cards and four distinct categories: arc, terrain, object, and mood. Arc cards define future trajectories; terrain cards suggest context; object cards outline the shape of the object, and mood cards represent emotional reactions. In each round, players use these cards to generate a four-card prompt. The second play card is the most recent version of *The Work Kit of Design Fiction* [6]. Each card in this kit is a representation of a potential characteristic of a future product, service, user-experience scenario, or artifact. There are 102 cards in five categories in this kit. The categories are archetype, object, attribute, action, and fool cards. During play, participants pick one card from each deck, connect the cards, and define artifacts depending on the pairings. They document the object's function, name it, and can even produce visual representations such as sketches or storyboards. This method is used until many artifacts are created. Players are challenged with creating a design brief for a product using the cards as inspiration.

Method cards are typically used as guidance tools throughout a design project. Among the method cards chosen for this study, the *IDEO Method Cards* [7] are a collection of 51 different design thinking methods. These method cards can be used at various stages of the design thinking process, from problem identification to prototyping and testing solutions. The cards are classified into four groups: learn, look, ask, and try. Learn cards examine the data collected to uncover patterns and insights. Look cards demonstrate how to observe individuals and learn what they do rather than what they say. Ask cards suggest how to elicit information important to one's project by enlisting people's participation. Finally, try cards assist in the creation of simulations that aid in empathizing with individuals and evaluating potential designs. *The SILK Method Deck* [8] is another method card chosen for this research. It is a card deck that the Social Innovation Lab Kent (SILK) initiative developed. It is intended to provide support for the processes of social innovation. The SILK Methodology [8] divides design thinking into four stages: initiate, create, test, and define. Within this methodology, *The SILK Method Deck* is used to determine which techniques are appropriate for use at various points in the project. When used in conjunction with SILK's diamond approach [8], *The SILK Method Deck* enables the project to be planned cooperatively in groups, with everyone having ownership over the decisions and paths the project will take. It can also be used to document what transpired during a project in the past. The deck is divided into five major categories: insight, plan, communicate, design, and workshop.

3 Results and Discussion

In this research, the content and operation of the four card decks mentioned were examined. The tables below describe what these tools offer to the designer within the framework of the five main skills: creativity, innovation, problem-solving, sustainability, and collaboration. While Table 1 compares the play cards, *The Thing From The Future* and *The Work Kit of Design Fiction*, Table 2 compares the method cards, *IDEO Method Cards*, and *The SILK Method Deck*.

Table 1: *Comparison of play cards and five key requirements*

Requirements	The Thing From The Future	The Work Kit of Design Fiction
Creativity	Promotes entertaining and thought-provoking descriptions of hypothetical objects from different future scenarios	Encourages forming connections and defining artifacts based on card combinations
Innovation	Provides broad trajectories or categories of future scenarios (ARC cards) and variable time horizons	Offers multiple categories of cards for combining and generating unique artifacts
Sustainability and Ethics	Does not explicitly incorporate sustainability as a focus	Sustainability is not directly mentioned in the card descriptions
Collaboration	Playable by teams, fostering collaboration in generating prompts and evaluating descriptions	Can be played in groups, potentially promoting collaboration in discussing and expanding on generated artifacts
Problem Solving	Requires critical and creative thinking to generate descriptions of future objects	Challenges players to form connections between cards and define artifacts, promoting problem-solving skills

Table 2: *Comparison of method cards and five key requirements*

Requirements	IDEO Method Cards	The SILK Method Deck
Creativity	Offers wide range of techniques, breaking free from routine thinking patterns, offers random shuffling	Offers variety of methods to inspire new ideas and stimulate creative thinking
Innovation	Offers prompts to challenge assumptions and inspiration for idea generation	Focuses on collective thinking and calls for collaborative innovation
Sustainability and Ethics	Fosters systems thinking and a holistic perspective that considers the long-term implications of decisions	Considers environmental and social impact, long-term sustainability, and stakeholders' perspectives
Collaboration	Offers common language and structure, usable in collaborative settings	Offers platform for discussion, open dialogue, active listening, shared language in a collaborative environment
Problem Solving	Usable for various types of problems, offers an organized structure for practical problem-solving	Usable for complex social problems in real-world situations, allows cross-pollination and is customizable for needs and contexts

When these card decks are examined in depth, problems arise about their use in the concept development process in certain areas. Firstly, due to their coverage of a wide range of design processes, problem-solving methodologies, and collaboration strategies, method card decks are useful tools in design education and

practice. They are curated to provide designers with a collection of ideas and approaches to dealing with various design challenges. However, due to their broad reach and inclusion, method card decks are not specifically designed for concept development. Instead, they are comprehensive resources for designers to use as they navigate the various stages of the design process, from concept development to implementation. While these decks provide valuable insights and processes, designers may need to modify and contextualize the methods to meet their specific concept development needs, making them more of a supplementary tool than a concentrated vehicle for concept creation. On the other hand, play card decks frequently focus on specific aspects of a design brief, offering short suggestions or ideas relating to various stages of the design process. These decks are intended to spark designers' creativity and provide inspiration as they brainstorm ideas for individual project elements or features. They do not, however, go into detail about the entire concept development process. While they can be useful for generating early ideas and exploring many options, designers may still need to conduct additional research, problem-solving, and iteration to build a coherent and complete design concept. As a result, play card decks are useful design aids but not stand-alone vehicles that cover the complete spectrum of concept development. Secondly, in terms of conceptual development, the use of play card decks and method-oriented decks in the design process presents various approaches. Play card decks provide creative flexibility to users by not directing them in terms of predefined conceptual development approaches. Users can construct their design concept in any manner they like. Method-oriented decks, on the other hand, provide users with instructions to follow during the design process but do not provide direction on the components of the design brief. Users must construct their own design brief while sticking to the methods outlined in the deck. These two techniques must be united to improve the ideation process, allowing users to freely explore ideas while simultaneously being steered by precise methodologies to enable more complete and accurate conceptual development. Thirdly, the card decks outlined above are applicable to the larger design discipline rather than just visual communication design. Play card decks, in particular, are intended to assist in the formulation of a design brief for industrial design products. The term "design discipline" refers to a broad category of specialized fields. Each of these professions has its own set of criteria and concerns. Lastly, as mentioned, this research values the design process as a reflective dialogue between two key actors: the designer and the user. However, the examined card decks focus exclusively on the designer and frequently overlook the significance of addressing the user. As a result, they fail to motivate designers to ask the basic question, "Who?". This question is not always addressed, and even when it is, it may not be given adequate attention. Card decks such as *The Thing From The Future* present alternate possibilities, prompting designers to conceive societies in precise times. While this partially solves the "Who?" question, it falls short because societies are not homogeneous entities. Our current society lacks homogeneity, with 8 billion varied individuals. As a result, a single design concept cannot sufficiently appeal to such a large and diverse population. In order to produce inclusive and meaningful solutions that meet the different complexities of human experiences, concept development tools must emphasize the user and their needs.

3.1 Proposed Structure of a Concept Development Tool

There is a need for a tool that will bring together methods and other components, cover the voices of all the actors in the dialogue and meet the needs of the visual communication design field. The authors believe that an infrastructure that emphasizes the 5W/1H questions (Who, What, Why, Where, When, and How) can provide such unity. The design thinking process begins with an assessment of a problem. In order to better understand the situation, it is necessary to empathize with those who are experiencing it. The information gathered during this phase contributes to a more precise definition of the problem. At the end of the definition process, a problem statement emerges. This problem statement serves as the framework

for the creative process. It is critical to stay within the framework of this problem statement during the creative process in order to construct an effective message for the user. During the Ideation stage, the designer should be reminded of this framework at all times. This is one of the reasons why the authors suggest positioning 5W/1H in the center as a reminder of the design problem statement. To begin with, in VCD, the "who" question is important. It is enough to identify a unique user group and their needs. This goes beyond age and income and takes into account the people who will use the design. By understanding users' diverse perspectives, designers can avoid biases and stereotypes and create authentic, inclusive messages. Designers foster creativity and innovation by investigating "who." Understanding the perspectives of various user groups inspires innovative solutions that address specific needs. This practice encourages designers to innovate in ways that are appealing to their users.

Following on, the answer to the "what" question is the designed product, regardless of the medium. For instance, imagine crafting a navigational tool to assist students in navigating a campus. The medium, whether a printed map or an interactive app, becomes secondary to the primary goal: to facilitate navigation. By anchoring design decisions in the fundamental "what," designers ensure that their creations remain consistent with the project's core goals. Examining the "what" also reveals problem-solving abilities. A design project's main goal is to assist a designer in identifying challenges and developing effective solutions. Focusing on outcomes enables designers to solve design problems methodically and create practical messages. Moreover, the design function is determined by the "why" question. It investigates whether the message is intended to inform, persuade, or inspire. Returning to the previous example, the "why" of the navigational tool emphasizes the importance of assisting students in navigating campus. Designers give their works meaning by understanding their purpose and ensuring that each component contributes to the whole. The "why" also sparks questions about sustainability and ethics. When designers investigate the intent of a design message, they think critically about their work. When designers align the "why" with ethical principles and sustainability goals, they create designs that are both impactful and socially responsible. Furthermore, the "where" aspect of the 5W/1H framework takes into account the context in which the design will be implemented. It's not so much about the medium as it is about the spaces—both physical and virtual—where the design is presented and used. Designers optimize the user experience in a variety of settings by taking context into account and tailoring their creations to specific environments. The question "where" also connects people. Designers facilitate collaboration and ensure message consistency across contexts by taking physical and digital spaces into account. This context awareness enables designers to collaborate seamlessly with stakeholders. Additionally, the "when" question delves into the design's temporal dimension. It entails figuring out when users will interact with the creation. Knowing the "when"—year, time, or event—allows designers to create timely and contextually relevant messages. This temporal awareness ensures that the design remains impactful and relevant when it matters most. Collaboration and innovation require precise timing. The "when" factor assists designers in anticipating user engagement and aligning design with user needs. This temporal awareness encourages user collaboration and inspires innovative ideas for addressing specific interaction moments, resulting in responsive and impactful designs. Lastly, the final "how" question concerns the medium by which the design conveys its message. Designers can ensure that their message is not only effectively communicated but also thoughtfully tailored to its intended audience by aligning the medium with the characteristics and expectations of the users. The "how" question can also improve collaboration. Empathy is developed by designers by matching the medium to the user's needs and abilities. This empathy encourages collaboration with users and stakeholders, ensuring that the medium chosen effectively communicates the intended message. Furthermore, considering the "how" from a collaborative standpoint promotes interdisciplinary

teamwork, in which designers collaborate with experts to implement the chosen medium effectively.

4 Conclusion

Finally, this study presents a novel model for a concept development tool tailored to visual communication design education requirements. It focuses on the ideation phase of the design thinking approach, emphasizing the importance of the creative process. It introduces an inclusive approach to promoting innovation and meaningful engagement by framing visual communication design as a reflective practice bridging the designer-user gap. The study looks into existing method decks and play card decks, evaluating their ability to foster essential skills such as creativity, innovation, problem-solving, sustainability, and collaboration. Although these tools are valuable in and of themselves, their limitations become apparent when applied to visual communication design's intricate concept development process. Furthermore, their outputs are out of sync with the field's unique requirements. The 5W/1H approach emerges as a promising alternative, providing a new perspective for an ideation tool. The proposed model supports the five essential skills for designers shaping a smart future. This integration is a significant step toward holistic, user-centered design capable of navigating complex challenges. However, it is critical to recognize the study's limitations, particularly its focus on comparing only four existing tools. Future research could broaden this scope to include a broader range of design aids. Furthermore, investigating the proposed 5W/1H model's application in real-world design projects could provide valuable insights into its effectiveness and practicability. In essence, this study sets off to discover a new direction in the visual communication design concept development landscape. The proposed model paves the way for innovative, user-centered designs that respond adeptly to the demands of a rapidly evolving creative world by emphasizing inclusivity, reflective practice, and skill cultivation.

5 Declarations

5.1 Competing Interests

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript, and there is no financial interest to report. The authors certify that the submission is original work and is not under review at any other publication.

5.2 Ethical Approval

An exemption letter was obtained from the Vice Rector of Istanbul Bilgi University, Turkey.

5.3 Publisher's Note

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