

Chapter 18

Idea Translation Approach Adapted by Novice Designers in Furniture Mean-Making



**Abu Ali, Wan Zaiyana Mohd Yusof, Siti Salwa Isa, Andre Liem,
Siti Suriawati Isa, Nor Lelawati Jamaludin, and Junita Shariza Mohd Nasir**

Abstract This research aims to understand sources of inspiration, both in defining the context for new designs and in informing the creation of individual designs by 14 novice designers. The motivations for this study lie in the evidence that the quest for originality, cultural aspiration, intimacy with the object, as well as the practicality of furniture, are the significant factors that influence the purchase of furniture and the growth of this business. In this paper, we discuss the inspirational tools and techniques in form-giving adapted by novice designers and what information is used to convey their ideas. We see it as the application of a language to the area of potential design concept generation. In a study of furniture design, we have observed that novice designers communicate with each other about new designs, styles, and moods, largely by reference to the sources of analogy especially symbol analogy.

A. Ali (✉) · W. Z. M. Yusof · S. S. Isa
College of Creative Arts, Universiti Teknologi MARA, Shah Alam, Malaysia
e-mail: abuali@uitm.edu.my

W. Z. M. Yusof
e-mail: zaiyana004@uitm.edu.my

S. S. Isa
e-mail: sitalwa@uitm.edu.my

A. Ali · S. S. Isa · A. Liem
Norwegian University of Science and Technology, Trondheim, Norway
e-mail: andre.liem@ntnu.no

S. S. Isa
Faculty of Forestry and Environment, Universiti Putra Malaysia, Serdang, Malaysia
e-mail: ssuria4@upm.edu.my

N. L. Jamaludin
Faculty of Business and Management, Universiti Teknologi MARA, Shah Alam, Malaysia
e-mail: norlelawati0019@uitm.edu.my

J. S. M. Nasir
Faculty of Creative Multimedia, Multimedia University, Cyberjaya, Malaysia
e-mail: junita.shariza@mmu.edu.my

18.1 Introduction

Creative production, which is to be an object or an environment to be originally experienced, is characterized as "... creations which, although limited by physical space, will inevitably try to create the world. What the artist does is convincing, the viewer's boundless imagination called upon or invited to enter this world and explore it" [1]. Multiple authors [2] conclude that the visual appearance of products plays an important role in determining consumers' reactions and good form evokes an aesthetic experience. Creativity operates through a transformation but what is also being transformed is the creator, as each decision made increases self-knowledge. A sign of transformation into a learner is a noticeable change from a relationship of projection to one of engagement [3, 4].

The interest in the study of form-giving has led to numerous related study's findings on ways to start and speed up and verify the form creation process results [5, 6]. Variation of conceptualization tools (sketching, model making, 3D computer drawing) and methods (visual references, linguistic interpretations and inspiration) used to support the form-giving sub-phases in the development process which was taught in the design program. Commonly used as key tools for enhancing creative design are metaphors and analogies, yet little research has been performed on their relation to each other and their use within the design phase process [3]. In this paper, we discuss the incorporation of multiple layers in the form-giving process to obtain the meaning of form and focus more on the inspirational sources in form-giving.

18.2 Three Approaches of Idea Translation and Form Inspiration Tools

Approaches can be allocated to one of the following three approaches such as a rational or systematic approach, an intuitive approach, or a contemplative approach (Fig. 18.1) [5, 6].

The systematic form-giving tools initiated in both institutes are comparable. The first tool is the approach based totally on the ideas of "order and means in design" [8]: ordering and structuring primary volumes, and introducing basic notions of topology, typology, and morphology. The second one is the two-step-generation

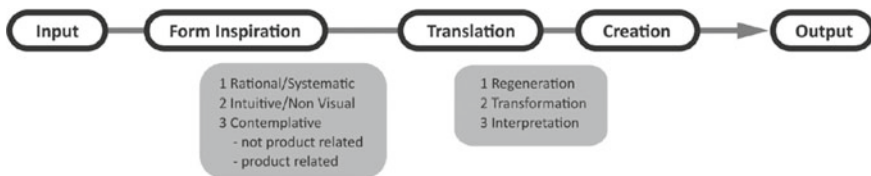


Fig. 18.1 IFTCO model. Source Mulder-Nijkamp and Corremaans [7]

technique [6]. This step-by-step approach begins with geometric volumes. By simple manipulations and variations in surface orientation, the technique allows generating some of the shape alternatives. This approach can be categorized as regeneration of idea translation of mean-making in form.

Although Goldschmidt and Sever [9] speculate that visible stimuli are more probable powerful than textual stimuli, nonvisual idea resources also can be beneficial to designers to build up their personal stocks of shape-locating techniques. Intuitive techniques permit designers to discover their persona; it assists them to comply with their very own instinct in growing novel products and gives confidence in making selections primarily based on the inspiration [10, 11]. Intuitive tools and techniques are serendipity, silhouette drawing, and synaesthesia, and these strategies use nonvisual stimuli to create new forms. This approach can be categorized as the transformation of idea translation of mean-making in a form that leads to extension or form-related metaphor [10, 11].

Research has proven that designers use existing pictures and photos (and different rich visual material), pasted in mood boards and collages as generative tools [12]. Visible stimuli in the conceptual search phase in designing have a tremendous impact on idea generation in terms of the judged creativity of preliminary ideas [13, 14]. This approach can be categorized as regeneration, transformation, or interpretation or idea translation of mean-making in form depending on specific goals set by the design challenge. Interpretation of form-making is different from transformation as it leads to extension or abstract metaphor.

18.3 Research Approach

For this study, novice designers were given the task to design a lounge chair for the airport with the theme of Malaysia's traditional ethnic dance. There were no constraints and boundaries in the design space. The technique of this approach is to use both induction and deduction to address the study's aim. This technique is shown in Fig. 18.2. The approach is used to derive heuristic principles or "concepts" from conditions or situations adapted from Azungah [15] and Pearse [16] that would require the need for remodelling of a tool of design language from Malaysia's traditional ethnic dance movement (deductive method) and transformation from repeated examples determined language from current dance movement that showcases transformation (inductive technique).

18.4 Deductive Research Approach

The deductive approach attempts to gather and study Malaysia's traditional ethnic dances and analyse them to:

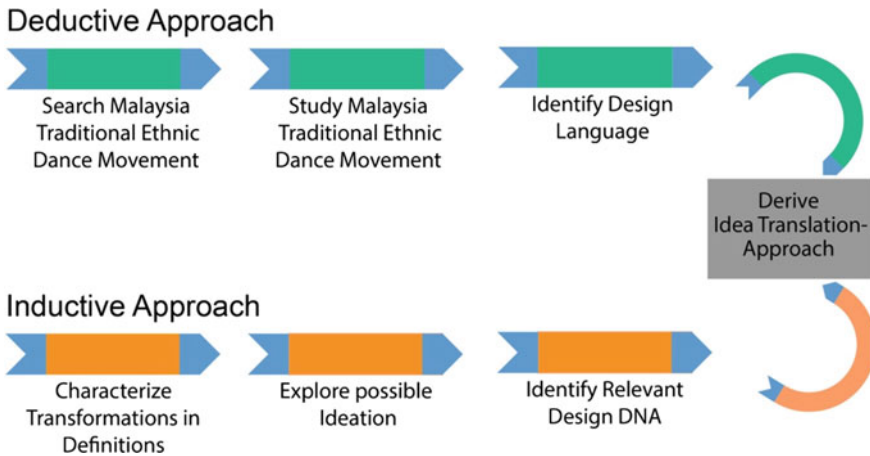


Fig. 18.2 Research approach

1. Dance movements: (i) Posture and space analysis—awkward posture analysis (domain, sub-domain, and subordinate); (ii) mapping analysis—(similar but different (DNA)—posture and space 3D object; (iii) aesthetic DNA style—dance posture (brand style DNA)—DNA extraction (morphology and psychology)

From the above analyses, a list of keywords and identity domains is generated by using the descriptions of transformers found in the dance movement’s results.

18.5 Inductive Research Approach

An inductive approach attempts to expand the domain of transforming principles through the phase of:

- Phase 1: Design research : (i) ROI analysis towards aesthetic media grammar (DNA style); (ii) genetic algorithm analysis—encode (gens) and decode (chromosome)—DNA aesthetic style (nodes); (iii) DNA aesthetic style (nodes)—shape—meaning—analysis: finding (Words); (iv) mood board (similar but different).
- Phase 2: Generative process : (i) ideations; (ii) linear unpacking analysis—insight.
- Phase 3: Design development : (i) meaning-making—mood board (similar but different); (ii) linear unpacking analysis—(design solution); (iii) mock-up development. (iv) detail design—parts design; (v) new design—mix and match (parts) coding analysis; (vi) detail design—concept, elements and principle of design; (vii) design refinement—final design.

Table 18.1 Malaysia traditional ethnic dance chosen by the novice designers

Designer	Malaysia traditional ethnic dance
1	Puteri Asyik (Asyik Dance)
2	Joget Pahang (Pahang Dance)
3	Tarian Ceracap Inai (Ceracap Inai Dance)
4	Mongigol Sumayau (Mongigol Sumayau Dance)
5	Tarian Piring (Piring Dance)
6	Joget (Joget Dance)
7	Joget Mak Inang (Mak Inang Dance)
8	Tarian Gamelan (Gamelan Dance)
9	Tarian Igal-Igal (Igal-Igal Dance)
10	Tarian Ngajat (Ngajat Dance)
11	Tarian Ulek Mayang (Ulek Mayang Dance)
12	Tarian Daling-Daling (Daling-Daling Dance)
13	Tarian Menora (Menora Dance)
14	Tarian Magunatip (Magunatip Dance)

18.6 Deductive and Inductive Idea Translation Extraction Analysis

The deductive and inductive research process of idea translation principle extraction makes use of studying Malaysia's traditional ethnic dance chosen by 14 novice designers as given in Table 18.1. The novice designers were given the freedom to choose any of the Malaysian traditional ethnic dances that they prefer so that the variation of designs gained will give different results in the idea translation approach.

The analyses of deductive and inductive led to identifying the type of idea translation approach adapted by 14 novice designers (Table 18.2).

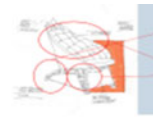


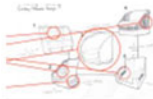


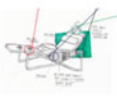














From the above analyses, Table 18.3 describes the type of idea translation approach and tools used to translate the lounge chair in form and mean-making.

18.7 Discussion

A comparison of the results shows that there are different types of inspirational tools and approaches that are suitable for different types of novice designers. The findings showed that out of 14 novice designers, 7 of them with a transformation approach while 6 of them prefer a regeneration approach, and only 1 with an intuitive approach (Table 18.4). This supported suggestions by Dorst [17]. According to Dorst [17], new designers do not have much experience and benefit more from a regeneration approach. The results of these rational inspirations can have high aesthetic appeal and value, but often the results are poorer in expression, emotion,

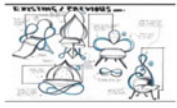





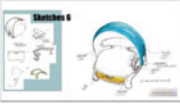


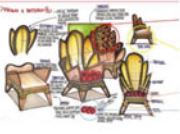



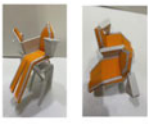


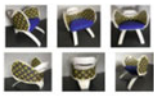




or basic importance. This is because the designer with a passion for intuitive inspiration has a greater relationship to art and prefers to work in a less structured way; however, intuitive tools are a process of trial and error and can be new and powerful, but they can also be poorer in expression, emotion, and basic meaning [10, 11]. Novice designers may find it challenging to work in a structured manner with a transformation approach due to the uncertainty of results. In contrast, the contemplative approach to regeneration and transformation tends to use both direct and symbolic analogies to convey specific narratives during the idea translation process.

Table 18.2 Analysis of deductive and inductive led to identifying the type of idea translation approach

	Dance	Design development	Mock-up development	Final design
Designer 1	Puteri Asyik (Asyik dance)			
Designer 2	Joget Pahang (Pahang dance)			
Designer 3	Tarian Ceracap Inai (Ceracap Inai dance)			
Designer 4	Mongigol Sumayau (Mongigol Sumayau dance)			
Designer 5	Tarian Piring (Piring Dance)			
Designer 6	Joget (Joget dance)			
Designer 7	Joget Mak Inang (Mak Inang dance)			

(continued)

Table 18.2 (continued)















Designer 8	Tarian Gamelan (Gamelan dance)			
Designer 9	Tarian Igal-Igal (Igal-Igal dance)			
Designer 10	Tarian Ngajat (Ngajat dance)			
Designer 11	Tarian Ulek Mayang (Ulek Mayang dance)			
Designer 12	Tarian Daling-Daling (Daling-Daling Dance)			
Designer 13	Tarian Menora (Menora dance)			
Designer 14	Tarian Magunatip (Magunatip dance)			

Additionally, novice designers’ intuitive approach often leads to a transformational outcome rather than interpretation.

18.8 Conclusion

Psychology researchers have studied how people think in terms of analogies and metaphors to develop and comprehend them [18, 19]. Even if the same thought process might be occurring right now, metaphor and analogy can be utilized to explain this process when it is used in the design process [20]. The process starts when one

Table 18.3 Analysis of the idea translation approach and tools used to translate the lounge chair in form and mean-making

Designer	Ethnic dance	Final lounge chair design	Form inspiration (tool) and creation (approach)
Designer 1	Asyik dance 		Contemplative (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms
Designer 2	Joget Pahang dance 		Contemplative (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms
Designer 3	Ceracap Inai dance 		Contemplative (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms
Designer 4	Mongigol Sumayau dance 		Contemplative (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms
Designer 5	Piring dance 		Contemplative (Direct analogy) Regeneration Findings: Copying style characteristics of the related sources
Designer 6	Joget (Melaka) 		Intuitive (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms with serendipity techniques
Designer 7	Mak Inang dance 		Contemplative (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms

(continued)

Table 18.3 (continued)















Designer 8	Gamelan dance 		Contemplative (Direct analogy) Regeneration Findings: Copying style characteristics of the related sources
Designer 9	Igal-Igal dance 		Contemplative (Direct analogy) Regeneration Findings: Copying style characteristics of the related sources
Designer 10	Ngajat dance 		Contemplative (Symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms
Designer 11	Ulek Mayang Dance 		Contemplative (Direct analogy) Regeneration Findings: Copying style characteristics of the related sources
Designer 12	Daling-Daling dance 		Contemplative (Direct analogy) Regeneration Findings: Copying style characteristics of the related sources
Designer 13	Menora dance 		Contemplative (direct analogy) Regeneration Findings: Copying style characteristics of the related sources
Designer 14	Magunatip dance 		Contemplative (symbol analogy) Transformation Findings: Translating the style characteristics of related sources into new forms

Table 18.4 Results of idea translation approach and tools used to translate the lounge chair in form and mean-making analysis

Designer	Form inspiration (tool)	Creation (approach)
1	Contemplative (symbol analogy)	Transformation
2	Contemplative (symbol analogy)	Transformation
3	Contemplative (symbol analogy)	Transformation
4	Contemplative (symbol analogy)	Transformation
5	Contemplative (direct analogy)	Regeneration
6	Intuitive (symbol analogy)	Transformation
7	Contemplative (symbol analogy)	Transformation
8	Contemplative (direct analogy)	Regeneration
9	Contemplative (direct analogy)	Regeneration
10	Contemplative (symbol analogy)	Transformation
11	Contemplative (direct analogy)	Regeneration
12	Contemplative (direct analogy)	Regeneration
13	Contemplative (direct analogy)	Regeneration
14	Contemplative (symbol analogy)	Transformation

discovers new knowledge (coding is a source of inspiration for a future problem). This person will experience a new problem in future and will need to remember and locate an appropriate source of solutions. The hardest part of thinking is embracing a valuable metaphor or analogy. Mapping is done between the resource and the new target scenario once the resource has been understood. Then, by creating these mappings, we can reach new conclusions. Therefore, it is recommended that designers be exposed to various working methodologies as part of the design program. This will aid designers in comprehending their individual creative processes and can help future design projects be more diverse. Although it is undeniable that most designers favour one approach over another, going back to your go-to source of inspiration can be disastrous. Initiating and mastering different forms of inspiration techniques from different methods can provide a broadening impact and stimulate creativity in giving form. The more different tools and techniques a designer masters, the more he/she can distinguish his/her designs. Thus, students with high potential can integrate systematic, intuitive, and contemplative methods and can easily distinguish between different techniques.

References

1. Nemett, B.: *Images, Objects, and Ideas: Viewing the Visual Arts*. Brown & Benchmark, Madison IL (1996)
2. Turkle, S. (ed.): *Evocative Objects: Things we Think With*. MIT Press, Cambridge, MA (2007)

3. Babapour, M., U.: The Bridging the discrepancy between reflective practice and systematic form generation approaches. In: Proceedings of the 15th International Conference on Engineering and Product Design Education. Dublin, Ireland (2013)
4. Crilly, N., Moultrie, J., Clarkson, P.J.: Seeing things: consumer response to the visual domain in product design. *Des. Stud.* **25**(6), 547–577 (2004)
5. Mulder-Nijkamp, M., Eggink, W.: Is it a bag or a bottle. The appreciation of different levels of translation in student's design work. In: International Conference on Engineering and Product Design Education. Antwerpen. (The design society) (2012)
6. Corremans, J.A.M.: Measuring the effectiveness of a design method to generate form alternatives: an experiment performed with freshmen students product development. *J. Eng. Des.* **22**(4), 259–274 (2011)
7. Mulder-Nijkamp, M., Corremans, J.: Muses in design: a comparison of inspiration techniques in product form giving education. In DS 78: Proceedings of the 16th International conference on Engineering and Product Design Education (E&PDE14), Design Education and Human Technology Relations, University of Twente, The Netherlands, 04–05.09.2014, 294–300 (2014)
8. Muller, W.: Order, and Meaning in Design. Lemma Publishers, Utrecht (2001)
9. Goldschmidt, G., S, A.L.: Inspiring design ideas with texts. *Des. Stud.* **32**(2), 139–155 (2011)
10. Toyong, N., Abidin, S.Z., Mokhtar, S.: A case for intuition-driven design expertise. In: Chakrabarti, A., Poovaliah, R., Bokil, P., Kant, V. (eds) Design for Tomorrow—Volume 3. Smart Innovation, Systems and Technologies, vol 223. Springer, Singapore (2021). https://doi.org/10.1007/978-981-16-0084-5_10
11. Faste, H.: Intuition in design: reflections on the iterative aesthetics of form. In: CHI, pp. 3403–3413 (2017)
12. Kolli, R., Pasman, G., Hennessey, J.: Some considerations for designing a user environment for creative ideation. In: Proceedings of the Interface '93. North Carolina State University, Raleigh, NC (1993)
13. Casakin, H., Goldschmidt, G.: Reasoning by visual analogy in design problem-solving: the role of guidance. *J. Plan. Des. Environ. Plan. B* **27**, 105–119 (2000)
14. Goldschmidt, G., Smolkov, M.: Variances in the impact of visual stimuli on design problem-solving performance. *Des. Stud.* **27**(5), 549–569 (2006)
15. Azungah, T.: Qualitative research: deductive and inductive approaches to data analysis. *Q. Res. J.* (2018)
16. Pearse, N.: An illustration of deductive analysis in qualitative research. In 18th European Conference on Research Methodology for Business and Management Studies, p. 264 (2019)
17. Dorst, K.: Design research: a revolution-waiting-to-happen. In: International Association of Societies of Design Research, 14 November. Hong Kong
18. Gentner, D., Holyoak, K.J., Kokinov, B. (eds.): The MIT Press, Cambridge, MA (2001)
19. Hummel, J.E., Holyoak, K.J.: Distributed representations of structure: a theory of analogical access and mapping. *Psychol. Rev.* **104**(3), 427–466 (1997)
20. Isa, S.S., Abu Ali, W.Z., Hassan, Z.: Form Implementation of Seating Behaviour based on Kuda Kepang Cultural Dance Movements (2020)