MUDRA
E-ISSN 2541-0407

MUDRA Jurnal Seni Budaya Volume 37 No. 1, Februari 2022
P119-128

Product Design Strategy Using Nirmana Dwimatra Concept (Implementation in the Learning Process in Product Design Student's of FIK Telkom University)

Husen Hendriyana[1*], Martiyadi Nurhidayat[2], Wuri Handayani[3]

[1,3]Institut Seni Budaya Indonesia Bandung, Indonesia
[2]Prodi Desain Produk, Telkom University, Indonesia

husenkriyadesain@gmail.com[1] martiyadi@telkomuniversity.ac.id[2] wuri08handayani@gmail.com[3]

This article is the result of designed research, and the writing is based on the practice-led research paradigm. This research's case study and background are based on classroom action research, specifically in the practice of 2D visual design. This design-practice study aims to provide models of creativity that can enrich the creative processes of similar designs with processes that are different from the existing ones. This work is created using the applicative approach of the Elementary Drawing Form, also known as Nirmana. To achieve the specified goals, the practice design method was carried out in four stages: understand (object & subject), exploration and experiment, define (point of view), ideate, prototype, and feasibility test. This Nirmana-dwimatra-inspired product design incorporates design fundamentals and principles to produce a valuable and meaningful work of design. This study affords models of creative processes based on a practice-led research instrument and indicator with aesthetic, artistic, and skill as its foundation.

Keywords: elementary design; elementary form, nirmana; imaginative reconstruction; artwork, and design.

Strategi Desain Produk Menggunakan Konsep Nirmana Dwimatra (Implementasi dalam Proses Pembelajaran pada Mahasiswa Desain Produk FIK Telkom University)

Artikel ini merupakan hasil penelitian perancangan yang dalam penulisannya didasarkan pada paradigma *practice-led research.* Studi kasus dan latar belakang penelitian ini diangkat dari hasil penelitian tindakan kelas, khususnya tentang studi praktik perancangan visual 2D. Studi praktik perancangan ini bertujuan menyampaikan model kreativitas yang dapat menambah perbendaharaan proses kreatif desain sejenis yang berbeda dari yang ada sebelumnya. Perwujudan karya ini dilakukan melalui pendekatan aplikatif Menggambar Rupa Dasar atau biasa disebut Nirmana. Untuk mencapai tujuan tersebut, metode praktik perancangan ini dilakukan melalui empat tahapan: *Understand (object & subject), exploration and experiment, define (point of view), ideate, prototype and feasibility test.* Proses perancangan produk dengan menerapkan konsep Nirmana dwimatra ini mengimplementasikan asas dan prinsip-prinsip desain hingga terwujudnya karya desain yang memiliki nilai dan makna. Penelitian ini menghasilkan model proses kreatif dengan instumen dan indikator *practice-led research* yang didasari dari pengalaman estetik, artistika dan skil.

Kata kunci: desain elementer, rupa dasar, nirmana, rekonstruksi imajinatif, karya seni dan desain.

**Corresponding author*
Received: May 22, 2021; Accepted February 14, 2022; Published February 28, 2022
https://doi.org/10.31091/mudra.v37i1.1969

INTRODUCTION

In the era of science and information technology development, especially with digitalization and online information media networks, 2D and 3D design works are much needed and utilized by users to fulfill their activities in daily lives, especially for the school communities, from elementary school teachers (Muslims, 2017) (Setyaningsih, 2015), Junior High School, Senior High School, to tertiary institution lecturers (Nuranisa PB, 2017) (Setyanto et al., 2018), (Ayu, 2013). Today's vocational high school students are familiar with applications that can be used to channel their visual creativity into digital media (Rahardja et al., 2013), which has now become one of the necessities in the world of art and contentment (Afatara & Prameswari, 2019) Siswadi (2013).

During the COVID-19 pandemic (online lectures), several students almost always google for product design references or items required. However, not everything in Google becomes a consumption destination for students and designers; they must also be able to enrich the online media (internet). In other words, rather than simply seeking and consuming online media, students must become contributors to the treasury of online digital creative products.

The main problem is that Nirmana, as the foundation of visual practice competency, is frequently overlooked by students and lecturers in higher-level courses. The neglect is due to the fact that by the time they reach the upper semester, most students and lecturers have forgotten the substance and basic scientific essence of work creation. The focus of this article's problem is how the principal substance and elements of consideration in the process of work creation and assessment, which are related to the basic competencies of art and design science, can be understood and articulated as the basic competence for students of visual arts, craft, and design.

In terms of learning, the consideration of a product's design is fundamentally based on the results of a needs and functions analysis. This means that one of the fundamental processes for designing a product is to research community needs. In this case, a designer can use one of the main form-follow-function approaches, namely prioritizing functions that are supported by the role of visual beauty (surface design) (Townsend et al., 2011), (Baier et al., 2017). The visual role of an object or product has a significant impact on the psychological aspects of user perception (Margawati, 2014), which can then affect users' comprehension and interest. Users will consume a product based on their requirements to solve the problems they are experiencing. As a result, the product will provide a solution for both practitioners and users in shaping the completeness of the comfort of their daily activities.

According to the theory on perception and semantic product (Hernawan & Syarief, 2021), (Sumartono, 2018), (Puspitasari & Wijaya, 2016), the product is seen by the user first and foremost through the interpretation process obtained through the sense system that works to produce a perceived judgment on a product; both in terms of the aesthetic value of its appearance, form, economy, function, and meaning. The impact of the process of interpreting a product can affect the user's personality, especially when responding to a product. The aesthetic illumination of the product to the user can give the user a sense of pleasure and pride in using the product, which can be attributed to the designer's success in creating a work.

Nirmana's theoretical approach, which organizes visual elements (points, lines, planes, textures, and colors) through aesthetic rules and design principles, can be used to understand a product's aesthetic aspects (Hendriyana, 2019). Nirmana's application aims to organize visual elements into creative actions that are repeated indefinitely until they become habitual in the creation of works (artistic experience).

This contrasts with the aesthetic aspect of the *ogoh-ogoh* sculpture in the *Helaran* event in Bali (Ganika & Suardana, 2019), which describes experimental aesthetics with a religious spirit, implementing artistic experience and creativity skills in the form of works of art, as well as Nirmana three dimensions theory and science.

People who involve in the world of visual arts, design, and crafts are unaware of the visual creative process strategies that exist in Nirmana (Elementary Forms) science and are then applied to products. As a result, this strategy can be used to guide someone to work in a systematic and structured manner by producing quality, relevant, accommodating, and projecting works of community needs in the scope of relevant concepts and contexts. As a result, Teachers and Students in elementary, middle, and high school can benefit from this alternative creative process model.

In the visual creativity learning process, there are various ways to increase one's interest both in the learning and the outcomes. One example is stimulating teaching media, which increases one's

interest in learning and thus results in high-quality learning outcomes (Kartono et al., 2020). As a result, the article is prominent in terms of providing a different model of the visual creative process in particular.

RESEARCH METHOD

This article was written using the typical *practice-led research* paradigm of classroom action research in the Department of Product Design, FIK of Telkom University, and D3 and D4 programs of FSRD at ISBI Bandung. This research population included product design studies for students with a sample and a focus on product design studies using the Nirmana dwimatra concept. Through a procedure description shown in the chart below (Figure 1), the design instruments covered topics such as *Understanding (object & subject), Exploration and Experimentation, Define (Point of View), Ideate, Prototype, and Feasibility test.*

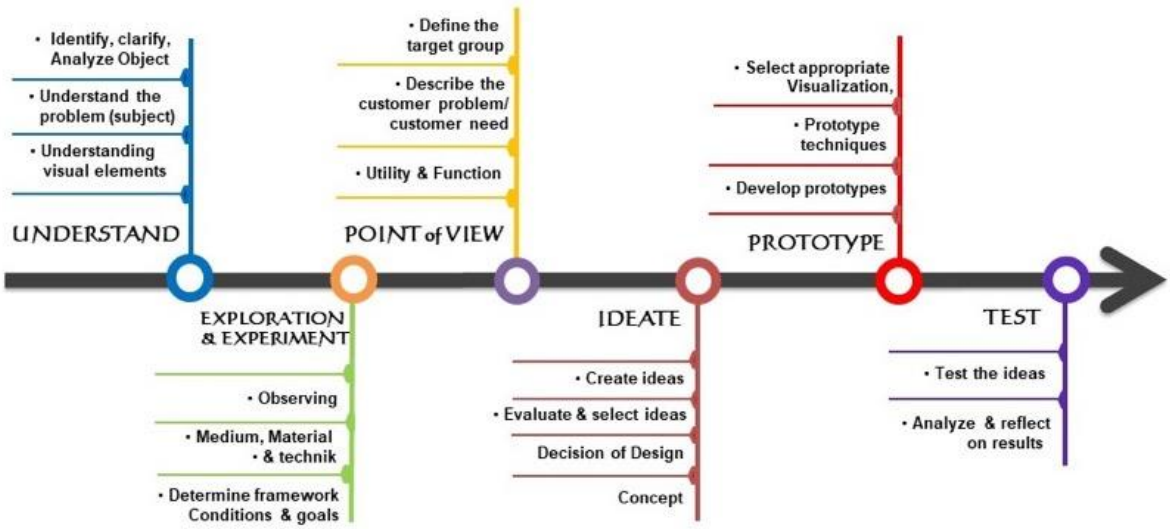

Figure 1. Design Method Chart

DATA INTERPRETATION AND ANALYSIS

Based on the classroom action research in Rupa Dasar practice course, of 25 students in the class, 9 students were included in the *apparel* category, 6 students into the *home appliance* category, 2 students into the *transportation* category, 2 students into the *public facility* category, 3 students to the *working tools* category, 2 students to the *jewelry* category, and 1 student to the *toys* category. The themes and titles for the various designs are vastly different. Twenty students got fairly good grades, and fifteen got very good grades.

The fundamentals of two-dimensional (2D) and three-dimensional (3D) design will determine the quality of the works of art designs, both theoretically and practically (Widada et al., 2015). The transformation of creative ideas into a form that necessitates theoretical and practical design concepts will result in high-quality design work. The assessment and classification results are shown in Table 1 and Table 2.

Table 1. Respondent Classification and Object Samples

Total Respondents	Respondent Classification	Product Design Sample Category
25 Students	2, 5, 6, 7, 11, 14, 15, 20, 25	Apparel
	1,3,4,8,9,12	Home appliance
	10,13	Transportation
	16,17	Public facility
	18,21,22	Working tools
	19,23	Jewelry
	24	Toys

Table 2. Assessment of Works

Assessment of Works		Information	
Respondent	**Assessment**	**Student**	**%**
2, 4, 5, 6, 9, 11, 14, 15, 16, 17, 23, 25	Very Good	12	48
1, 3, 7, 8, 10, 18, 20, 21, 22	Good	9	36
12, 13, 24	Fairly Good	3	12
19	Not Good	1	4

According to the Table 1 and Table 2, 12 students were very good, 9 students were good, 3 students were quite good, and 1 student was not good.

As illustrated in the following example, which can be explained from either the left or the right. The source of inspiration for visual elements that can be picked up and developed will also determine the organizational structure of the visual medium, which will produce *surface design* forms. Specific object inspiration will provide an overview of certain visual elements that will underpin the work's concept, which will be determined later. To transform inspiration, ideas, and concepts into visual works (*surface design*), it is necessary to explore and experiment with the organization of the visual medium, such as points, lines, planes, textures, and colors, into the form of artistic aesthetic elements.

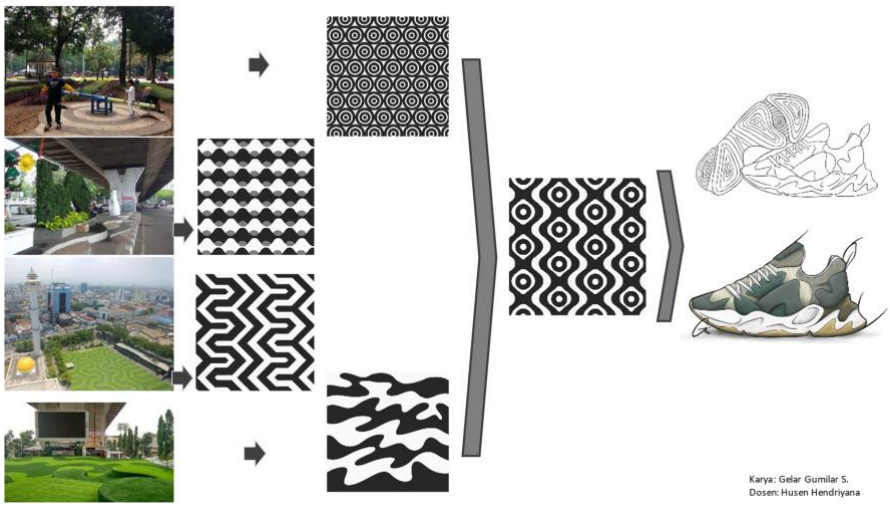

Figure 2. Product Design with Nirmana Concept (Photo source: Husen Hendriyana, 2021)

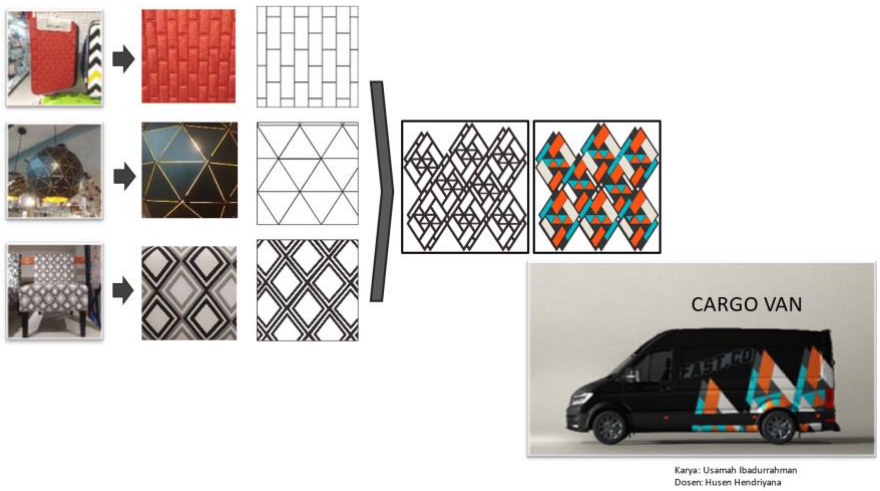

Figure 3. Product Design with Nirmana Concept (Source: Husen Hendriyana, 2021)

A design strategy is a flow or technical step that aids in the creation of art and design (Palgunadi, 2008). To complete the design process, various actions must be taken, such as studying, conducting experiments, conducting analyses, and making decisions for various sketches, models, mock-ups, or prototypes. In the design strategy, the steps in the application of Nirmana's concept begin with experimentation and continue with the application of visual elements and design principles to form a unified artistic composition. To produce relevant and quality product designs; it must (1) pay attention to the visual concept, which consists of the basic principles of art and design principles (Palgunadi, 2008). This will determine the visual concept so that it is appealing to users; (2) implement the Nirmana concept, which has levels of beauty such as shape, thickness or bulkiness, and space. These three factors are crucial in determining the value, function, and meaning of the visual works. The definition of *barik* or *gembal* is the same as that of the surface design (Hendriyana, 2019).

The approach, in this case, focuses on the aesthetic rules (fundamentals and principles) of organizing visual elements such as medium, media, and technique. The visual medium consists of points, lines, planes, shapes, textures, colors (*hue-value-chroma*), and visual principles such as proportion, composition, balance, rhythm, pattern, emphasis, and so on (Hendriyana, 2019). Media includes paper, canvas, cloth, paint, pencil scratches, and other commonly used materials. Shade, *overlapping*, shape transformation, dry coloring, wet coloring, shading, brushing, collage, and other techniques are examples of how to approach the medium and media.

When the three components: medium, media, and technique are organized according to art and design principles, they produce visual works with a certain aesthetic appeal. The *value* of work, both in form (forma; tangible) and intangible values such as content (meaning and symbols), as well as the expression of the creator's emotions, can be described as aesthetic appeal (Walker, 2010).

Figure 4. Matters related to form(Source: Hendriyana, 2019: 31)

The form can create an impression or image, it can create value, and it can fill space in a work, so it is one of the elements of the degree of beauty in the concept of Nirmana. Colour is an important element in the beauty that is related to form and space. Colour composition is an arrangement of colors used in art and design. Colors are arranged into an ordered composition to create an appealing appearance, and the composition is also determined by the situation because the color is always perceived with its surroundings and atmosphere (Darmaprawira, 2002).

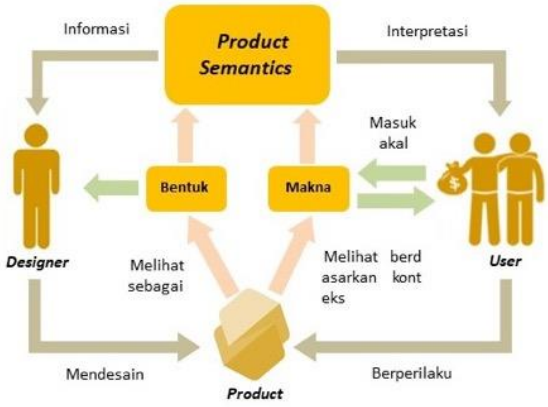

Figure 5. Product and People Communication Chart

The components related to the meaning of a product's visual form, such as signs (icons and symbols) attached to a product and is understood as a communication message to users, are studied using visual semiotics and product semantics (Gumulya & Onggo, 2016). Semiotics and semantics can also reveal the designer's emotions (expressions) in his work, sending messages through signs to affect the psychology of the user (Sumartono, 2018).

The following is the product design process strategy using the Nirmana dwimatra concept:

Understanding Object and Subject

During the idea imagery stage, students look for product references to be designed through objects that have visual relevance to the design form that will be created, such as photographing objects, plants, and animals in their surroundings. In terms of subject introduction at this stage, the students must recognize the substance of the object being photographed as a reference (Figure 2 and Figure 3). The substance is nothing more than a visual medium (points, lines, planes, textures, and colors) that is implied beyond the object's visual value.

Exploration and Experiment

Students must recognize and identify the objects and subjects listed above to understand the fundamentals and principles of design. Knowledge of design fundamentals and principles greatly aids understanding of skills to explore and experiment with surface design through the organization of visual media (points, lines, planes, textures, and colors).

Point of View and Attitude

When a student is a designer, he must consider aspects of usability and function, as well as the shape and form of the product to be designed. In selecting and determining the design/*final design*/selected design, an objective attitude is highly required.

Transformation of Ideas and Concepts

The process of transforming ideas into objective reality, namely the visualization (surface design) process depicted in Figure 2 and Figure 3, begins with defining the concept and considering the character, style, and theme of the product that will be the product's final destination.

At this stage of the process, the organization of visual elements such as points, lines, planes, textures, and colors using design principles and fundamentals such as; proportion, composition, balance, rhythm, scale, repetition, distance rhythm, volume rhythm of the visual medium, the transformation of form/field, and *overlapping* becomes a specific 'pattern' that is applied to a product to produce a novelty value that is distinct from the others.

Visualization

Nirmana's theoretical approach (referring to fundamentals and principles of design) visualizes considerations of character, style, theme, or product concept, such as proportion, composition, balance, rhythm, impression, shutter, expression, protrusion, repetition, scale, *overlapping*, and so on.

Feasibility Study

Feasibility studies are not properly considered at this stage because the design process does not result in the realization of the prototype model or finished product. At this moment, the feasibility study concentrated on 2D design, specifically the application of elementary drawing (*surface design*) on a specific product orientation. As seen in Figure 2 and Figure 3, the suitability for the application of medium, organizing techniques, and visual forms (sports shoes and Cargo Van vehicles) is demonstrated harmoniously.

According to aesthetic emotions, students are frequently rough, resulting in overexposed, overrun,

complicated, and complex works in which all of their creative ideas are incorporated into a single work concept. Therefore, the principle of simplicity must be stated in the work to limit the emotions of the various aesthetic expressions, as shown in the comparison of the works in Figure 6 and Figure 7.

Figure 6. Nirmana of Lines

Figure 7. Nirmana of Lines

Concept Analysis on Product Design

Referring back to the fish born chart and the action processes mentioned above, the main instruments of the fundamental design process that can be used as indicators in the assessment process can objectively measure the quality of student work. The basic elements of design, such as: studying the object of inspiration; examining the substance of the object of inspiration; carrying out task instructions according to the specified objectives; experiments, also known as exploration and experimentation (processing of shapes from the transformation of ideas and inspirational objects; analysis; sketching, and design decisions), are all part of a series of *practice-led research* flows in the basic design creative process (Hendriyana, 2018). This basic *practice-led research's* concepts and action process are are show in Figure 8.

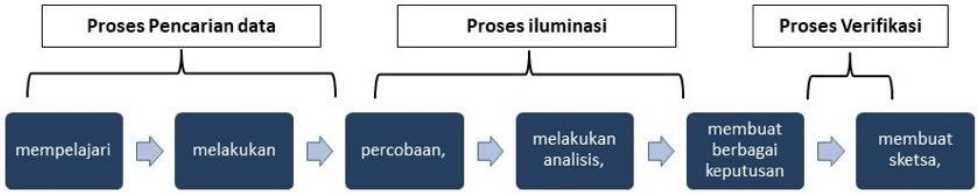

Figure 8. Stages of Basic Learning Design Practices in the Classroom

Every issue that arose during the data collection process was documented so that the data could be collected correctly. The problem was then formulated in such a way that it became specific and focused. In the illumination process, the right design solution is sought through the application of visual media (points, lines, planes, textures, and colour) based on beauty and design principles. To carry out creative actions, visual elements are organized into simple forms (surface design 2D), and/or nature is imitated. The following process is the verification of various visual images that are embodied in the form of sketches, which becomes a decision from the student's perspective. The student's concept as a designer eventually becomes the selected design sketch.

Visual Analysis

Certainly, indicators such as form (formal), content (symbol), and emotional expression are used when conducting visual analysis (Hendriyana, 2019). As shown below, this indicator aims to be able to determine whether a work is aesthetic.

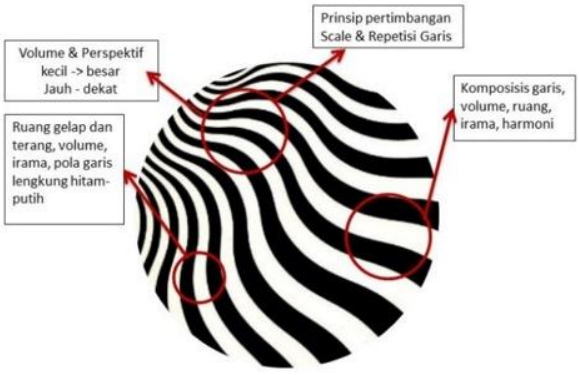

Figure 9. Application of the Beauty Principles and Design Principles on Line Shapes

Nirmana theory examines all aspects of fine art components (points, lines, planes, shapes, colors, textures, and shades) and design principles (proportion, composition, rhythm, repetition, scale (volume gradations, planes), dimensions, perspective, emphasis, congeniality, contrast, and harmony). These two elements and principles are inextricably linked and inseparable. As a result, the visual artist will always employ these two elements. As Astuti has applied in teaching materials for students of Fine Arts Education, Yogyakarta State University, Nirmana dwimatra's work is a two-dimensional concept whose essence is to exercise: thoroughness, tenacity/diligence, prudence, honesty, patience, and love for objects of local wisdom and/or the surrounding environment (Astuti & Ismadi, 2015).

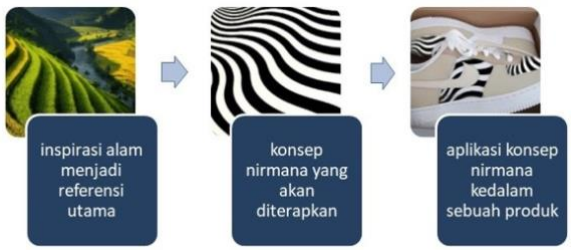

Figure 10. Transformation of ideas – visual – form

As illustrated in Figure 8, visual references serve as the foundation for very basic data collection and strategies in product design processes. The modified natural environment reference from the preceding work example can then be used as Brand Knowledge and/or tourism icons (Purnawan et al., 2021). First, identify the visual substance of the reference, specifically the visual medium in the form of a line, before making any changes. As a result, Nirmana, a theory that studies the fundamentals of the visualization process, is important and strategic in its application in the design process.

At this stage of the visualization process, the practitioner uses an imaginative reconstruction of an object or natural object as shown in (Figure 2, Figure 3, and Figure 8). This imagination is then reconstructed into elementary drawing patterns using certain design fundamentals and principles, in conjunction with a visual analysis process to obtain visual elements such as points, lines, fields, textures, and colors. The process of imaginative reconstruction in the creation of works of visual art such as this is similar to the process of imaginative

reconstruction in the creation of Rejang Pala Dance clothing (Satyani & Gunarta, 2021).

CONCLUSION

Nirmana Theory is a primary and fundamental visual practice competency. In this regard, it is critical to comprehend and be able to apply the primary substances and elements of consideration in the creation of works (practice-led research) and/or practice-based research. This is closely related to the fundamental scientific competencies of fine arts, crafts, and design because it serves as the foundation for students' competence from the start of their studies until they become professionals in the fields of art, craft, and design.

To become competent in this field, one must understand the substance and indicators that guide the creation of a work of art, as described in the discussion.

Combining a product's way of thinking in terms of practice-led research and/or practice-based research with the Nirmana application is an alternative solution for implementing the design process, allowing novice designers to train themselves to develop feelings in the creation of simple designs/products/artworks.

A variety of student assignments contain a variety of design patterns, which can then be used as one of the 'creative process models' for student learning, particularly in product design, craft, and fashion design materials. It is appropriate for both beginner and intermediate levels, and it can be completed concurrently with the creation of a Final Project in their studies.

REFERENCES

Afatara, N., & Prameswari, N. S. (2019). Studi Eksplorasi Biomorfik sebagai Ide Dasar dalam Penciptaan Karya Seni Rupa Tiga Dimensi. *Brikolase : Jurnal Kajian Teori, Praktik Dan Wacana Seni Budaya Rupa*, *11*(1), 43–51. https://doi.org/10.33153/brikolase.v11i1.2677

Astuti, E. P., & Ismadi, -. (2015). Pengembangan Bahan Ajar Mata Mata Kuliah Dasar-dasar Desain Berbasis Kearifan Lokal Bagi Mahasiswa Pendidikan Seni Rupa. *Imaji*, *11*(2). https://doi.org/10.21831/imaji.v11i2.3838

Ayu, A. P. (2013). "Nirmana-Komposisi Tak Berbentuk" sebagai Dasar Kesenirupaan Fakultas Seni Rupa Institut Kesenian Jakarta. *Jurnal Ilmiah WIDYA*, *1*(2).

Baier, J., Kuchinke, L. M., Neumann, M., & Bender, B. (2017). Form and function - Exemplary analysis of the Significance for the Design of Rehabilitation Devices. *IEEE International Conference on Rehabilitation Robotics*, 740–745. https://doi.org/10.1109/ICORR.2017.8009336

Darmaprawira, S. (2002). *Teori Warna dan Kreativitas Penggunaannya*. Penerbit ITB.

Ganika, M. A. A., & Suardana, I. W. (2019). Ogoh-Ogoh dan Implementasinya pada Kreativitas Berkarya Seni Rupa Tiga Dimensi. *Mudra Jurnal Seni Budaya*, *34*(1). https://doi.org/10.31091/mudra.v34i1.632

Gumulya, D., & Onggo, T. A. (2016). Penelitian Persepsi Kemasan Produk Skin Care Wanita dengan Pendekatan Teori Semantik. *Journal of Visual Art and Design*, *8*(2), 119. https://doi.org/10.5614/j.vad.2016.8.2.4

Hendriyana, H. (2018). *Metodologi Penelitian Penciptaan Karya : Seni Kriya dan Desain Produk non Manufaktur)* (B. Sapto (ed.); first). Sunan Ambu Press. http://perpustakaan.isbi.ac.id/?menu=search&action=simple&keyword=metodologi+penelitian+penciptakaan+karya+&coll_type=book

Hendriyana, H. (2019). *RUPA DASAR (NIRMANA) Asas dan Prinsip Dasar Seni Visual (Philosophy and theory of fine and Decorative Arts)* (Giovanny (ed.); First). http://andipublisher.com/subkat-55-desain-grafis.html. https://scholar.google.co.id/citations?user=06Cwp2cAAAAJ&hl=id

Hernawan, A. R., & Syarief, A. (2021). Semantika produk kacamata dan hubungannya dengan pencitraan kader politik. *Productum: Jurnal Desain Produk (Pengetahuan Dan Perancangan Produk)*, *4*(1), 43–52. https://doi.org/10.24821/productum.v4i1.4053

Kartono, G., Mesra, M., & Azis, A. C. K. (2020). Pengembangan Media Ajar Grafis Komputer Materi WPAP dalam bentuk E-Book dan Video Tutorial bagi Mahasiswa Seni Rupa. *Gorga : Jurnal Seni Rupa*, *9*(1), 127. https://doi.org/10.24114/gr.v9i1.18191

Margawati, M. (2014). Memahami Persepsi Visual: Sumbangan Psikologi Kognitif dalam Seni dan

Desain. *Fakultas Seni Rupa Dan Desain, Universitas Multimedia Nusantara (UMN) Tangerang.*, *05*(01), 47–63.

Muslim, A. (2017). Integrasi Estetika dalam Pembelajaran di Sekolah Dasar. *Modeling: Jurnal Program Studi PGMI*, *4*(1).

P.B, S. N. (2017). Menghadapi Generasi Visual: Literasi Visual untuk Menstimulasi Kemampuan Berpikir dalam Proses Pembelajaran. *ELSE (Elementary School Education Journal): Jurnal Pendidikan Dan Pembelajaran Sekolah Dasar*, *1*(2a).

Palgunadi, B. (2008). *Desain Produk: Membuat Rencana (Jilid ke 4)*. Penerbit ITB.

Purnawan, R., Pitana, I. G., & Darma Putra, I. N. (2021). Cultural Landscape: Brand Knowledge Wisatawan tentang Bali dalam Online Travel Review Communication Platform. *Mudra Jurnal Seni Budaya*, *36*(2), 254–263. https://doi.org/10.31091/mudra.v36i2.1200

Puspitasari, D. G., & Darmawan, J. (2014). Modifikasi Pembelajaran Desain Dasar (Nirmana) bagi Program Studi Animasi. *Humaniora*, *5*(2), 685–697.

Puspitasari, D. G., & Wijaya, H. (2016). The aesthetic sensibility of Nirmana Dwimatra through design methods based on stimuli of senses (Study case of estetika rasa and aroma project). *Advanced Science Letters*, *22*(5–6). https://doi.org/10.1166/asl.2016.6725

Rahardja, A., Puspitasari, D. G., & Wiguna, M. (2013). Eksplorasi Desain Dasar (Nirmana) melalui Kombinasi Media Grafis Analog dan Digital: Suatu Penelitian Kelas/Studio. *Humaniora*, *4*(2), 1029. https://doi.org/10.21512/humaniora.v4i2.3543

Satyani, I. A. W. A., & Gunarta, I. W. A. (2021). Reka Ulang Koreografi Rejang Pala, Setelah 100 Tahun Menghilang: Sebuah Rekonstruksi Imajinatif. *Mudra Jurnal Seni Budaya*, *36*(1), 33–45. https://doi.org/10.31091/mudra.v36i1.1108

Setyaningsih, H. (2015). Pemanfaatan Unsur Seni Rupa untuk Meningkatkan Kreativitas Siswa dalam Menggambar Dekoratif di Sekolah Dasar. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *3*(2).

Setyanto, D. W., Sulistyawati, P., & Rahmasari, E. A. (2018). Implementasi Nirmana Pada Fotografi Portraiture 3D Anaglyph. *Desain, Jurnal Visual, Komunikasi*, *02*(02), 143–156.

Siswadi, S. (2013). Nirmana Nada Bertautan: Alih Wahana Rupa menjadi Bunyi. *Panggung*, *23*(2). https://doi.org/10.26742/panggung.v23i2.96

Sumartono, S. (2018). Semantik dan netnografi sebagai pendekatan penelitian untuk perancangan kembali (redesign) sebuah produk. *Productum: Jurnal Desain Produk (Pengetahuan Dan Perancangan Produk)*, *3*(3), 95–100. https://doi.org/10.24821/productum.v3i3.1925

Townsend, J. D., Montoya, M. M., & Calantone, R. J. (2011). Form and function: A matter of Perspective. *Journal of Product Innovation Management*, *28*(3). https://doi.org/10.1111/j.1540-5885.2011.00804.x

Walker, J. A. (2010). *Desain, sejarah, budaya: sebuah pengantar Komprehensif*. Jalasutra.

Widada, S., Widya Tama, A. K., & Surbakti, R. K. (2015). Manfaat Mempelajari Dasar-Dasar Perancangan Sebelum Melakukan Pekerjaan Desain Media Komunikasi. *CICES*, *1*(1). https://doi.org/10.33050/cices.v1i1.114