

# **A Language of Children with Disabilities in Digital Pattern Design**

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Visual Language of Children with Special Needs in Digital Motif Design. This article aims to understand the designs made by children with special needs in the form of digital motifs done on adobe photoshop softweat. Data collection is done through direct observation, literature study and practice. This problem is analyzed using qualitative methods with a design thinking approach which includes empathize which is the initial stage carried out personally to children with special needs to get the right action, define the selection of tools or software that can help realize visual works in the form of digital design, ideate the stage of producing ideas in the form of moodboards which are set as a reference for realizing digital motif designs, prototype the initial design of digital motifs that still look static and can be used as the main sample of the creative process so that it can measure the suitability of the designed design concept, and test is the final stage of testing carried out as a process of understanding from children with special needs using Adobe Photoshop softwear so as to produce digital motifs that look dynamic and in accordance with the designed concept. The result of this research is the visualization of digital motifs that have character and characteristics through hand strokes and sense or art owned by children with special needs and add to the diversity of design work, especially in the field of fashion in making digital motifs as an effort to raise the value of art and creativity created by children with special needs.

*Keywords: Visual Language, Children with Special Needs, Digital Pattern Design*

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## INTRODUCTION

Children's drawing is a medium of communication. Children communicate with pictures before they can write, they do it naturally rather than with writing that they have not mastered, so the images produced are also free scribbles but contain certain meanings. Paying attention to the drawings that children make, makes researchers interested in knowing how they process to get their imagination, so that they can represent of what they see into the form of a picture. According to experts, every child has creative potential that can be developed throughout their lives. This creative potential can consist of several aspects such as imagination, artistic or aesthetic skills, social and emotional sensitivity, critical and solution thinking skills, and the ability to innovate. Unfortunately, not all children can develop this creative potential due to factors that are less supportive, both genetic and non-genetic factors such as children with special needs.

Children with special needs are children who experience delays in development, have medical conditions, psychological conditions, or certain congenital conditions. They need special attention and treatment in order to reach their potential. Proper support and parenting in handling children with special needs fosters creative potential and talent that can develop optimally and produce artwork that is greater than normal children in general.

Works of art are created with the aim of providing experiences or messages that can influence human feelings, thoughts, and outlook on life. Likewise in fashion, works of art that are created can be translated and applied into fashion designs or products by applying visual elements as well as design principles. Fashion product development cannot be separated from a creator who designs and makes a work, this can be done by anyone who has artistic value and creativity. Therefore, this research collaborates with children with special needs while training them to create a masterpiece of art in product development with digital techniques.



Figure 1: SLB B Pangudi Luhur Jakarta Barat (Source: Research Team Documentation, 2023)

These special needs children are students of SMK Pangudi Luhur West Jakarta grades 8 and 9 consisting of 3 students and 3 female students, later they will make a work of art according to their respective creativity so that the work can be implemented in product design development. The results of fine art works from special needs children are expected to be applied in product design as an effort to raise the value of creativity from the images they create. This research was inspired by children with special needs, how they can carry out a creative process that could build the value of art in themselves, foster confidence to create works of art and get a job and income from their own work. So this research is expected to be applied to the development of learning and assistance to the community in working with children with special needs.

## RESEARCH METHODOLOGY

The methods used in this research are qualitative methods that work to provide strong and detailed descriptions. This method uses a design thinking approach which is a design methodology that relies on finding solutions aimed at solving complex problems either cognitively, creative or practical. This is used as a step for the process of designing up to producing works in the form of Digital motifs produced by children with special needs by operating adobe photoshop as a creative medium. Design thinking theory consists of several stages, namely empathize, define, ideate, prototype and test. The results of these stages are describe based on the visualization of digital motifs by children with Special Needs and see the possibility of these digital motifs can be applied to various types of fashion product.

## RESULT AND DISSCUSSION

Children with disabilities are defined as children who require special treatment due to developmental disorders and abnormalities experienced by children. The Ministry of Women's Empowerment and Child Protection of the Republic of Indonesia 2013, explains that children with special needs are: "Children who experience limitations or abnormalities, whether physical, mental-intellectual, social, or emotional, which have a significant effect on the growth or development process compared to other children of the same age". In general, it can be concluded that children with special needs (Heward, 2002) are children with special characteristics that are different from children in general without always indicating mental, emotional or physical disabilities. Other

terms for children with special needs are exceptional children and disabled children. Special needs children can be simply defined as slow or retarded children who find it very difficult to succeed in school like other children.

### The Creatives Process of Children with special needs

Children with special needs are children who have differences in characteristics with other children in general (Budi, S. 2022, p. 192). This situation requires special needs children to receive special treatment according to their respective needs. Children who need special treatment are those who experience emotional, behavioral, intellectual and even physical illnesses. Geniofam (2010) has suggested that children with special needs have intellectual disabilities and a lack of emotional transmission, making children with needs difficult to predict due to emotional instability and even physical abnormalities. Children with special needs need to be encouraged to grow and develop, special treatment from family members and special treatment from schools, especially the care of parents and people who are in close proximity to them.

Understanding the lives of children with special needs, their growth that relies on the environment becomes a goal in developing their potential. Inclusive schools are a hope for children with special needs to learn to develop their potential, such as the

quality of education of special teachers, adequate and supportive personnel and equipment that they can get in inclusive schools. Septa et al, 2021 say that children with special needs can follow or fully participate in school activities and can receive teaching or courses related to their needs. In the child's learning process is where the child learns to know the

surrounding world and the communication process also goes hand in hand (Nagara M, 2022).

This research examines the development of creativity of children with special needs in designing a digital motif through computerization. The creative process has a system of learning methods that are applied, namely the face-to-face learning system and tutorials. The face-to-face learning system is an activity where students will be accompanied by a teacher to guide learning, such as learning activities in general. While the tutorial learning system is interactive, inspiring, interesting, challenging, and inspires students to play an active role, and provides space to add a sufficient and adequate level of creativity of students.

### Mind Mapping

Mind mapping is a basic stage in mapping several ideas in the form of a structured framework to help remember or analyze a problem. Where there are some benefits in making mind maps such as helping to understanding new concepts, findings creative ideas and helping to formulate problem

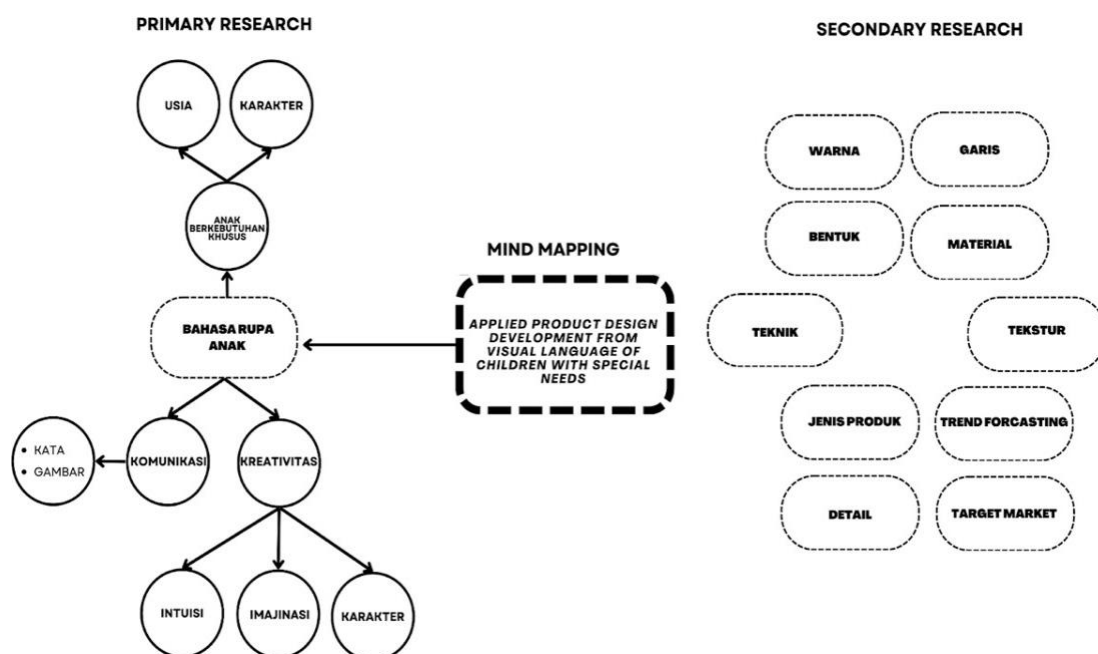


Figure 2: Mind Mapping (Source: Research Team, 2023)

The mind mapping above illustrates the process of making a work that consists of the main idea juxtaposed with qualitative methods so in the process it will apply the elements and principles of design in the creation of digitized motifs made by children with special needs using Adobe Photoshop softwear as digital media.

### **Concept (Moodboard)**


Moodboard is a collection of images that are composed in such a way that it becomes a reference to define the main idea of the product design that will be created and serves as a stimulus to be able to provide an overview of the specific overall work concept (Perangin Angin, D. 2023. pp. 115-123). This is realized in the form of a collection of

images that function as a stimulant to provide an overview of the overall concept of the work and become the inspiring concept of product design.

The material for making moodboards is explained first to children for special needs in detail and clearly so that they can understand what is conveyed and can be practiced directly on digital media.

In the process of making concepts in the form of moodboards, children with special needs use digital techniques and operate adobe photoshop software. This is the most popular software and is widely used by professionals and non-professionals in image processing and has many features according to the needs of its users (Felisa, J. 2020. Page 61). Basically, children with special needs already have the knowledge and ability to operate adobe photoshop software because it is one of their subjects at school so that in the process of making concepts with digital techniques there are not too many mistakes in operating adode photoshop softwear.

Table 1. Moodboard of Children with Special Needs

No	Name	Moodboard
1.	Gendi	

2.	Lina	
3.	Farell	
4.	Azel	
5.	Margaux	



There were 6 moodboards of creativity from children with special needs where in the process they looked for various types of images according to their wishes, so that of the 6 moodboards in the table above, all moodboards have a female character who is their target market who has an independent, strong and feminine character, then in terms of color there are 6 different colors in each moodboard, such as in the moodboard by Gendi, the dominant green color is inspired by leaves and mountainous nature which gives a cool and calm impression. Furthermore, the moodboard made by Lina shows a gradation of dark purple to pink which gives a soft impression like a woman's soft nature. In contrast to Farell's moodboard which has slightly dark colors such as black, silver and skin tones that gives the impression of being strong, mysterious and earthy. Azel created a moodboard that produces bright but calm colors and has a cheerful, soft and warm character. in contrast to the moodboard from Margaux and Thomas which

has a red color and is inspired by tulips and roses so that it gives a strong feminine impression and character.

The result of the moodboard in the table above is the initial concept in product creation and development and the concept will be a reference for them in making patterns, where researchers try to process the creativity of children with special needs to create digital patterns that can be applied on fabric and can be applied to clothing.

#### *Development of Design Digital*

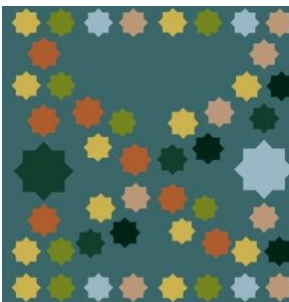


Digital design is a type of design created and created using applications or other design media so that digital design development can be used freely in determining design lines, colors, shapes and textures as well as other details in a design (Asmayanti, Dkk. 2020, pp. 61-72). Therefore, the designs that will be made by children with special needs are several digital motif designs that are done using Adobe Photoshop software and apply the design elements contained in the previous concept or moodboard.

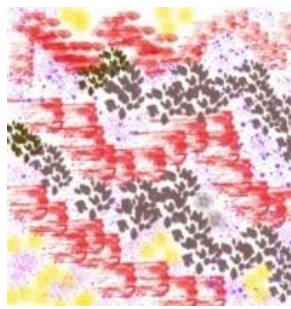
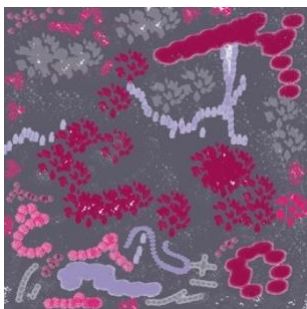

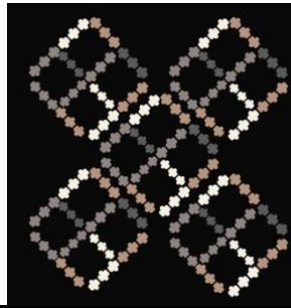
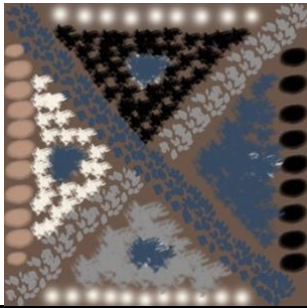
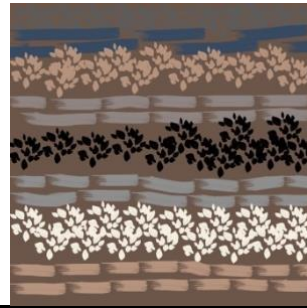




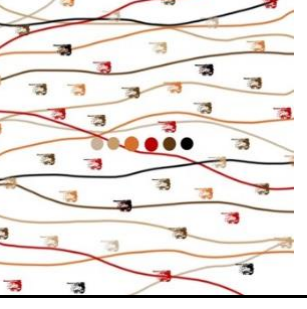


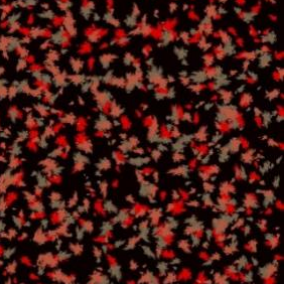

#### *The Alternative of Digital Pattern Design*

This stage is a process of making motif designs as alternative designs with the aim of considering functional and aesthetic needs factors and apply design elements that have

been determined in the mind map and moodboard. So there are several alternate pattern designs that are made using Adobe Photoshop software as a medium for digital creativity with the following result

Table 2. Digital Pattern Design for Children with Special Needs

No	Name	Pattern 1	Pattern 2	Pattern 3
1.	Gendi			

2.	Lina			
3.	Farell			
4.	Azel			
5.	Margaux			
6.	Thomas			

The tables above are a collection of alternative designs made by children with special needs using digital media, namely Adobe Photoshop software. The children each made 3 alternative designs of digital motifs inspired by the previous moodboard, so that the motif above is the result of the translation of a moodboard. In the process, children with special needs are very rigid in making digital motifs because these children still have not released their imagination in making digital motifs and this can be seen in the design of motif 1 which is still too symmetrical and rigid. So in the next stage, researchers appeal to children with disabilities to be able to develop ideas in making digital patterns freely and with their respective creativity using various types of tools in Adobe Photoshop but still referring to the moodboard.

In this case it can be seen in the results of the process of making motif design 2 which looks a little more dynamic but is still trying to develop more and this can be seen from the selection of more diverse colors, diverse shapes, and dynamic lines and compositions. Therefore the author gives the results of the evaluation to these children regarding the results of making alternative motifs to 2 so that they can be much more confident and can be more free in developing their ideas into a motif. for that the author asks the children to make one alternative pattern again by developing the results of the evaluation of motif 2.

In the results of this 3rd pattern, it can be seen that the differences are quite dynamic starting from the shape, line, color and composition of the shape. This happens because of the opportunity given to children with special needs in the creative process and providing opportunities to be able to explore their creativity in creating digital motifs even though in the process of their activities there are several obstacles faced such as lack of understanding in reducing concepts to designs that cause them difficulties and the mood or feelings they are experiencing during the creative process. So that special handling is needed in overcoming these problems such as giving them a short break, providing explanations that are light and easy to understand, providing examples of images or examples of the process

of using tools in the software and maintaining their mood so that the process can run well, because basically in the field the mood of children with special needs is easy to change and they are less able to overcome this well so that there needs to be assistance by professional teachers in the learning process.

## CONCLUSION

Digital pattern designs made by children with special needs prove that creativity is an ability that everyone has. With the right stimulus, children's creativity will develop well and perfect their abilities. Evidently, the work they design can be well implementation and their ability to use tools in adobe photoshop software can be applied effectively. The results of their designs can be compared with children in general, and can even be used as commercial products in the future.

The digital patterns they design can read their personality characteristics using visual language, which by using this method will help teachers in the learning process carried out in the classroom, how teachers provide stimulus and build the motivation so that the communication process and the mood and abilities possessed by children with special needs can be explored. With drawing, designing, conceptualizing activities that are fun will make children feel happy. Children can express themselves composing the elements of art that exist on tools freely and imaginatively. This research focuses on the results of digital pattern design with the use of tools through Photoshop software, where children with special needs can seamlessly apply their design concepts more efficiently and effectively such as choosing colors, choosing shapes, and arranging the placement of objects without the need to be complicated. It is different if children have to do art activities manually such as painting or drawings that require preparation of tools and materials. Therefore, children's sensitivity will definitely be slightly different, when children are faced with digitalization and manual methods. In the digital way, they can easily understand and adapt to the tools provided by the software without taking a long time to adjust. In contrast, with the method of manual drawing, they must go through various stages of a series of sensitivities and will take a long time to understand and adjust to using manual drawing tools and materials. For example, how to draw a line with a pencil will definitely be different from using a brush. When choosing colors, children must know how to mix primary, secondary and tertiary colors. The application technique

in the manual way to produce thick and thin strokes or strokes cannot be done in an instant.

Based on this, children's sensitivity must always be trained to improve the quality of their drawing skills. Digital and manual both have their own strengths and benefits, in this case the teacher has a very important role in developing children's creativity,

imaginations, and sensitivity. Teachers must be sensitive in choosing materials and the techniques used in the learning process, therefore children with special needs must often be introduced to a variety of drawing techniques so that they can also feel the emotions felt when dealing with tools, materials, and other unique and interesting media.

## REFERENCES

- Angin, D. A. K. P. (2021). Pengaplikasian Teknik Anyaman Pada Busana Muslim Bergaya Casual Sporty. *ATRAT: Jurnal Seni Rupa*, 8(3).
- Asmayanti, Mukhirah, Fadilah. (2020). Aplikasi Desain Digital Dalam Dunia Fashion. *Jurnal Ilmiah Mahasiswa Pendidikan Kesejahteraan Keluarga*, 5 (1). 61-72.
- Barnard, M. (2011) . Fashion sebagai Komunikasi Cara Mengkomunikasikan Identitas Sosial, Seksual, Kelas dan Gender. Yogyakarta: Jalasutra.
- Basuki. (2021) . Pengantar Metode Penelitian Kuantitatif. Media Sains Indonesia. Kota Bandung.
- Bbkb. Kemenprin. 2020. Pengertian Motif Batik dan Filosofinya. [https://bbkb.kemenperin.go.id/index.php/post/read/pengertian\\_motif\\_batik\\_dan\\_filosofinya\\_0#:~:text=Motif%20adalah%20suatu%20corak%20yang,suatu%20bentuk%20yang%20beraneka%20ragam.](https://bbkb.kemenperin.go.id/index.php/post/read/pengertian_motif_batik_dan_filosofinya_0#:~:text=Motif%20adalah%20suatu%20corak%20yang,suatu%20bentuk%20yang%20beraneka%20ragam.) Diakses, 9 Agustus 2023.
- Budi, S. (2022). Implementasi Kurikulum 2013 Bagi Peserta Didik Berkebutuhan Khusus. *Educatio*, 17(2), 192–203. <https://doi.org/10.29408/edc.v17i2.9158>
- David, Roseline. (2012) . Mengenal Anak Melalui Gambar. Jakarta: Salemba Humanika.
- Desi Ningrum, D. R. (2017). Psikologi Anak Berkebutuhan Khusus.
- Felisa, J. (2020). Penerapan Actionsript pada Adobe Photoshop. *Media Informatika*, 19(2), 61–64. <https://doi.org/10.37595/mediainfo.v19i2.42>.
- Gunawan, A. I., Sosianika, A., Rafdinal, W., & Ananta, D. (2022). Discovering advancement in technology and mass media influence on gen Y male fashion consciousness. *Diponegoro International Journal of Business*, 5(2), 146-157.
- Hanisha, F., & Djalari, Y. A. (2018). Bahasa Visual, Gambar Anak, dan Ilustrasi Pada Buku Cergam Anak. *Jurnal Seni dan Reka Rancang: Jurnal Ilmiah Magister Desain*, 1(1), 63-82.
- Hendriyana, Husen. (2020). Metodologi Penelitian Penciptaan Karya. Yogyakarta. ANDI.
- Indarti, I. (2020). Metode Proses Desain dalam Penciptaan Produk Fashion dan Tekstil.
- BAJU: Journal of Fashion & Textile Design Unesa*, 1(2), 128-137.
- Irvan, Muhammad. (2011). Fase Pengembangan Konsep Produk Dalam Kegiatan Perancangan Dan Pengembangan Produk. *Jurnal Ilmiah Faktor Exacta*, 4(3), 261-274.
- Kotler, Philip dan Armstrong, Gary. 2008. *Prinsip-prinsip Pemasaran*. Jakarta: Erlangga.
- Kurniawan, D. A. (2013). Pemanfaatan Limbah Kaos dan Katun sebagai Trimming pada Busana Casual Wanita Dewasa.
- Lasalewo, Trifandi, Subagyo, Hartono. B., & Yuniarto, A. H. (2015). Perspektif Pengembangan Produk Berdasarkan Kajian Literatur. *Proceeding The 5th Annual Engineering Seminar*.
- Murdiyanto, Eko. (2020). Metode Penelitian Kualitatif. LPPM UPN Veteran. Yogyakarta Press.
- Nagara, M. R. (2023). CREATIVITY AND LEARNING PROCESS IN VISUAL LANGUAGE OF EARLY CHILDHOOD. *Cultural Arts International Journal*, 3(1).
- Nagara, Martien Roos. (2022). Proses Kreativitas pada Gambar Anak Usia Dini di TK A Santo Yusup II Bandung. *Jurnal Rupa*, 7(1), 19-29.
- Naradika, Della. (2020). Masa Depan Pada Gambar Anak, Kumpulan Esai. Yogyakarta: Gorga.
- Patappa, M. M. (2019). STUDI TENTANG PEMBUATAN DESAIN MOTIF BATIK LONTARA.COM. *JURNAL IMAJINASI*, 3(2), 36. <https://doi.org/10.26858/i.v3i2.13038>.
- Perangin Angin, D. (2023). Implementation of Weaving Techniques in Products Fashion Men's Ready To Wear. *INTERNATIONAL JOURNAL OF ART & DESIGN*, 7(1), 115-

123. Retrieved from <https://myjms.mohe.gov.my/index.php/ijad/article/view/22798>.

Prasetyo, D., & Disarifianti, N. (2021). Studi Pengembangan Desain Motif Batik Tulis Lasem Rembang. *Prosiding Seminar Nasional Desain Komunikasi Visual, 1*, 14–25. <https://doi.org/10.33479/sndkv.v1i.120>.

Ramadhan, M. S., Yulianti, K. N., & Ananta, D. (2022). Inovasi Produk Fashion dengan Menerapkan Karakter Visual Chiaroscuro Menggunakan Teknik Cetak Tinggi Cukil Kayu Block Printing. *Gorga: Jurnal Seni Rupa, 11*(1), 192-201.

Riadi, Muchlisin. 2020. *Strategi Komunikasi (Pengertian, Teknik, Langkah dan Hambatan)*.

Setiyo, Adi Nugroho. dkk. 2021. Perancangan Identitas Perusahaan Dalam Bentuk Stationery Desain Di Rumah Kreasi Grafika. *Jurnal Ilmiah Komputer Grafis, Vol. 14, No. 1*, hlm. 48-75.

Sunarmi. 2013. Peran Riset Dalam Perwujudan Desain. *Jurnal Brikolase, Vol. 5, No. 1*, hlm 14.

Suwandi, E. F., & yan Sunarya, Y. (2021). Motif tenun sebagai bentuk bahasa rupa dari masyarakat Suku Mbojo di Bima Nusa Tenggara Barat. *JURNAL RUPA, 6*(1), 24-33.

Tabrani, Primadi. 2014. *Proses Kreasi - Gambar Anak - Proses Belajar*. Bandung: Erlangga.

Tabrani, Primadi. 2012. *Bahasa Rupa*. Bandung: Kelir.

Tobroni, M. I. (2013). Menggali Kreativitas Seni pada Anak Berkebutuhan Khusus. *Humaniora, 4*(1), 221-227.