INTERNATIONAL JOURNAL OF CONSERVATION SCIENCE
ISSN: 2067-533X Volume 15, Issue 2, 2024: 801-814 www. ijcs. ro
DOI: 10. 36868/IJCS.2024.02.04

DABBING TECHNIQUE AS A MEANS OF ACQUIRING IMAGES FOR HAND-SCREEN PRINTING

George Kwame FOBIRI[1,*], Adelaide TAKYIWAA[2], Charles FRIMPONG[3], Ebenezer Kofi HOWARD[3], Solomon Marfo AYESU[1]

[1] Department of Fashion Design and Textiles Studies, Faculty of Creative Arts and Technology, Kumasi Technical University, P.O. Box 854, Kumasi, Ghana
[2]Department of Home Economics, Ejisuman Senior High School, Ejisu-Kumasi, Ghana.
[3]Department of Industrial Art, Faculty of Art, Kwame Nkrumah University of Science and Technology, PMB, Kumasi, Ghana

Abstract

The art of screen printing largely depends on images captured from both natural and artificial sources. Obviously, with the upsurge of technology in the 21st century, images are easily captured with different kinds of cameras. Notwithstanding, creativity is propelled by a shift from normalcy from the artistic point of view. Innovative approaches to image acquisition for the conservation of textiles printing techniques, especially hand screen printing, can never be overemphasised. This study explores dabbing as an innovative image-capturing technique from found objects for textile printing with inspiration from the Rayograph technique by Man Ray. The Art studio-based research design under the Qualitative research method was employed for the study. Two approaches (Direct and Indirect dabbing) became significant. The studio exploration yielded to four articles comprising two printed fabrics for apparel purposes and two wall hangings for decorative purposes. A complement of the dabbing technique with screen printing was observed to be an innovative approach to the conservation of textile printing. It gives artists a great opportunity to utilise found objects in their surroundings that go a long way to minimize waste. The study recommends the Dabbing technique to textile design practitioners/learners as a technique worth-considering in textile design and printing.

Keywords*: Dabbing; Found objects; Image acquisition; Textile printing; Technique preservation.*

Introduction

The art of textile printing has recently been given maximum attention by researchers with a special focus on devising effective and innovative technological approaches, materials and techniques required to achieve adorable print effects on textile surfaces. From the manufacturing of additive materials [1-3] to the use of sophisticated printing machinery and techniques [4-6], scholars are tirelessly working to conserve the art of textile printing. Others have also probed into the essence of creativity in textile design and visual art in a wider perspective. Various theories have therefore been suggested to cover creativity within the artists, the product made by the artist and the processes or methodologies adopted [7]. Throughout the creativity journey (from critical thinking to developing concepts), images are not left out. The use of images in artistic expression has proudly projected the minds of artists and aided in effective communication globally. Most artists have explored images with texts to present and conserve their creative ideas and languages [8]. Others have also employed images

* Corresponding author: kfobiri@gmail.com

from cultural products in textile design [9]. Historical images aid in the analysis and preservation of cultural elements of ethnic groups [10, 11]. Images play a pivotal role in the preservation of textile design and printing techniques, especially screen printing. These could be obtained from natural and artificial sources and may be subjected to an artistic rendering to become suitable for screen printing.

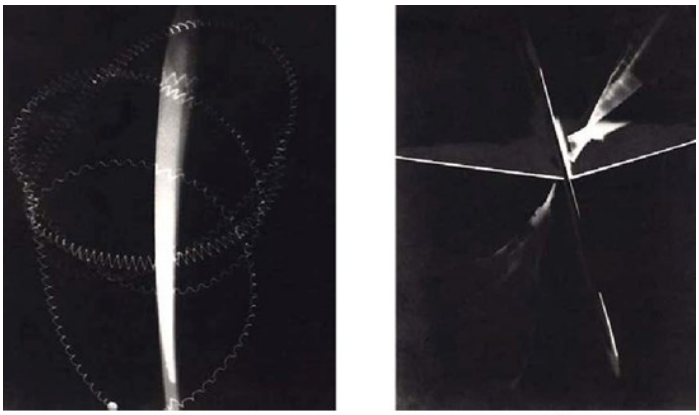
Screen printing is the process of pressing ink through a stencilled mesh screen with a squeegee to create a printed design. This technique could be explored on different types of items such as technical textiles, textiles for clothing and footwear, leather goods, furnishing, and household and decorative textiles making it a more versatile technique in the art discipline [12, 13].

Textiles produced by the screen-printing technique have gained attention in many communities around the world over the centuries due to the numerous benefits they offer to producers and consumers [14]. Screen printing is believed to have originated from the traditional stencilling technique of the Polynesians. This technique of the Polynesian inhabitants made use of banana leaves as screens for the production of their cloth called Tapa [15, 16]. The ink was pushed through the leaves with the help of hard brushes to generate the prints. The technique was later adopted by the Japanese who made use of screens produced from human hair. The modern-day screen printing is traced to the Chinese during the era of the Song Dynasty. Screens for printing are made in flat or cylindrical forms with woven fabrics made from yarns including silk, polyester, and nylon [17]. The aesthetic look and performance of printed textiles greatly depend on image sharpness [18]. Although hand screen-printed products come with less print clarity and a minimal number of patterns repeat and colours as compared to digitally printed ones [19], screen printing can never be overlooked amid manual textile printing techniques like woodblock printing. This makes the art worth conserving.

Different techniques have been explored by artists with inspiration from different sources to achieve images in photography and screen printing over the ages. Man Ray (Emmanuel Radnitzky) was an American artist popularly known for his Rayograph technique where images called photograms were obtained without a camera. The artist developed images from found objects onto sensitized photographic paper by arranging the objects directly onto the sensitized paper and subsequently exposing them to light. Figures 1(a) and 1(b) show samples of Man Ray's rayographs produced in 1922. In 1907, William Morris and Samuel Simmons used sheets of silk and cotton stretched over wooden frames and placed a single colour, hand-painted stencil on top of it to create a design into a print. Drawing and cutting out stencils by hand in desired shapes or cutting the designs from a non-porous material and attaching it to the bottom of the screen to transfer the images onto the prints became one of the best techniques in twentieth-century screen printing [20]. Painting of negative images directly onto a screen with the filter method which becomes impermeable when it dries also became a popular technique in the twentieth century. The drawing was done with a solid wax or a lithographic tusche and the whole screen was covered with water-soluble filler. The water-based block-out was repelled by the drawn grease but effectively filled the other parts of the screen. After drying, the grease was dissolved by a solvent which opened the drawn areas to the passage of the ink.

Designers take inspiration from diverse sources in showcasing their talent. Inspiration, therefore, plays a significant role in guiding the artist in design activities [22]. This has called for the need for researchers to identify various ways of achieving images in screen printing. Tinkham [23] opines that images can be achieved in screen printing through the use of the Photo stencil method. The images are drawn onto papers and transferred through the use of photosentive emulsion onto the screen. The author further expresses the fact that cut-out paper designs can also be placed on a surface and the screen is lowered on it. The screen was pressed down to ensure complete contact with all cutouts and the ink applied. The ink then caused the cutouts to stick to the base of the screen, thereby producing a stencil effect, according to Adu-*S. Akwaboa* [24], images can also be achieved in screen printing by using objects as positive

designs. Natural and artificial objects can be placed onto a surface in place of positive designs to produce designs onto screens.



a. b.

Fig. 1. Man Ray's rayograph (1922). Source: [21]

The author further added that bold designs can be drawn onto screens directly and the negative areas painted with lacquer. *W. Badoe et al*. [25] explored materials within the immediate environment for hand screen printing. The authors discovered eight techniques from both natural and artificial sources. These techniques include Spray Printing, Sponge Block and Broomsticks Technique, Twigs Block-Printing, Marble Printing Technique, Bottle Printing Technique, Brush Printing Technique, Lace Transfer Printing and Fabric Painting Technique. The result of their exploration is shown in Figures 2-5.

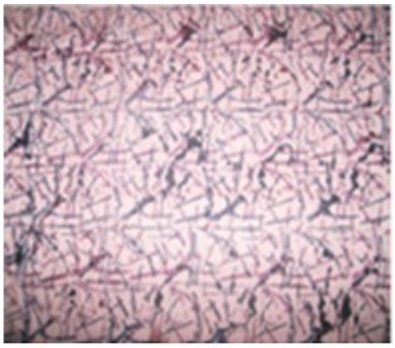


Fig. 2. Printed fabric from twig block [25]

Fig. 3. Printed fabric from sponge block and broomsticks technique [25]

S. Quansah and K. Safo-Ankama [26] also investigated the creation of textile design patterns from natural and artificial sources focusing on a direct transfer of the objects onto a screen. In the developing process, the natural and artificial materials are arranged on the developing box, and the coated screen is put on the materials. The patterns are obtained on the screen after exposure and washing. The materials used by the author in the exploration include leaves, pieces of paper, sawdust, local sponges, and threads. Some of the author's explorations are shown in Figures 6-9.

Fig. 4. Printed fabric from marble printing technique

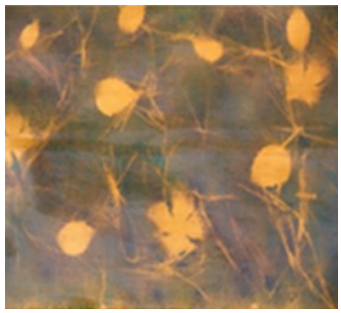


Fig. 5. Fabric printed from spraying technique

Fig. 6. Wood chippings spread on 'light box' [26]

Fig. 7. Coated screen placed on design [26]

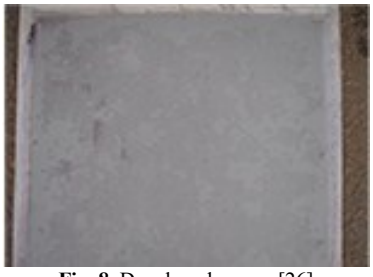


Fig. 8. Developed screen [26]

Fig. 9. Printing of design [26]

The authors above have creatively approached textile design and printing with inspiration from their surroundings. This approach is cherished because it is believed to result in many more discoveries which enhance human life [25]. This study also approached hand screen printing with inspiration from the researchers' environment as explored by scholars [25, 26] in their studio research. However, this study dealt with an innovative means of capturing images from found objects through the dabbing technique to prepare the screen for the printing process. It strives to diversify image acquisition for textile printing with a focus on preserving the hand screen printing method in the 21st century where numerous means are employed in creating impression on textiles.

Materials and Methods

The art studio practice research design was adopted for the study. Methods such as experimentation and exploration were employed to guide the assemblage and usage of the various tools and materials to arrive at an innovative result. The study aimed to explore the nonconventional method of textile printing with a focus on the dabbing technique. Materials and tools used for the exploration include sticks, leaves, rubber pegs for hanging clothes, corks for sinks, plastic containers, electrical wires, foam, macramé cords, pens, plastic spoons, cotton wool, bond sheets, water-based print paste etc. Dabbing was explored in two different ways

(*Direct and Indirect*) to capture the negative image of the natural and artificial objects onto paper to commence the screen preparation for hand screen printing.

Direct dabbing process

The direct dabbing technique was significantly used to capture negative images directly from found objects. In this process, the items were arranged on paper and cotton wool was dipped into a water-based print paste and used to dab around the arranged items. After dabbing, the surface of the paper was seen to be covered with the print paste. The areas with the items were left with white negative images of the items after taking the arranged items off the paper. Some of these items were also dipped into a white print paste and stamped on the surface of the paper to show tones and bring out specific details of the items. Figures 10(a) and 10(b) show the arrangement of the items while figures 11(a) and 11(b) show the images obtained after dabbing.

Fig. 10. Found items arranged on a paper.

Fig. 11. Images obtained after dabbing.

The images obtained were further worked on to make them repeatable during the printing process. This was done by the use of a computer software (Adobe Photoshop). The opacity of the images, which is a key factor in screen developing, were also adjusted. Figure 12 shows the finished image repeated to form a design.

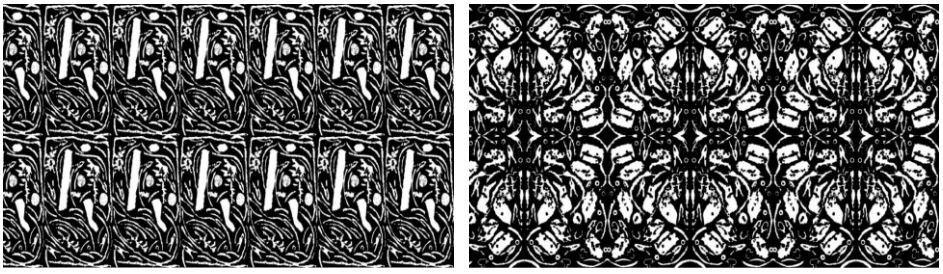


Fig. 12. A design from found objects

Indirect dabbing process

The indirect dabbing process as opposed to the direct dabbing involved capturing the negative images of found objects first onto a foam and later transferring them onto a paper for further editing with the computer. In the indirect process, the found objects were sandwiched between two pieces of foam with one furnished with print paste. Foam was used for this experiment due to its absorbent nature. The indirect dabbing process is explained below.

Stage One (1): Spreading of Printing Paste on a Foam

The initial stage of the transfer involves the spreading of black printing paste onto a foam. The size of the foam was big enough to allow several items to be arranged on it, since that may determine the beauty of the result. Black printing paste was used for this exercise because the image needs to be opaque enough to aid the screen development process with the photosensitive agent. Figure 13 shows the initial stage of the transfer process.

Fig. 13. Spreading of black printing paste onto the foam

Stage Two (2): Arrangement of Objects on the Furnished Foam

Objects gathered from the environment were consciously arranged on the black printing paste spread on the foam. The items were plastic spoons, macramé cords and a pen. Figure 14 shows the arrangement of found items on the furnished foam while Figure 15 shows the outcome of the arrangement process.

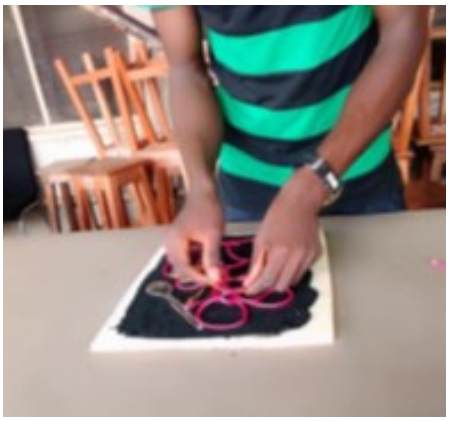


Fig. 14. Arrangement of found items.

Fig. 15. Outcome of the arrangement.

Stage Three (3): Capturing of a Negative Image onto another Foam

The negative image of the arranged items was captured onto another prepared foam with equal dimensions as the furnished one. This was done by exerting pressure on the second piece of foam against the furnished one, thereby sandwiching the items in-between the two pieces of foam. After applying enough pressure, the second foam was lifted, revealing the captured image in negative form. Figures 16 and 17 show the capturing process.

Fig. 16. Application of pressure to capture image.

Fig. 17. Captured image.

Stage Four (4): Transfer of Image onto Paper

The captured image in stage three (3) was subsequently transferred onto the paper/film to be used for developing the screen. This stage again demanded pressure to transfer the image from the foam onto the paper/film. Afterwards, the paper/film was left to dry. It is advisable to dry the paper under a fan instead of the sun to prevent warping. The dried paper was then scanned for further adjustments such as checking the repeat with computer software (Adobe Photoshop). Figures 18 and 19 show the transferring process while Figure 20 shows the final images obtained.

Fig. 18. Application of pressure.

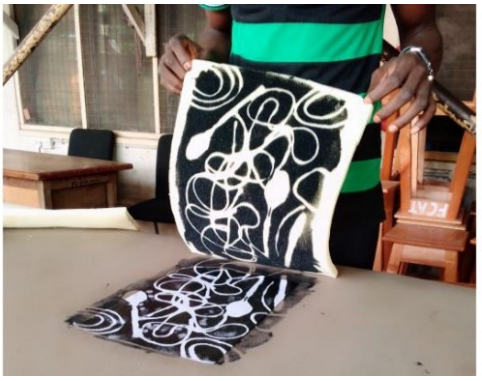


Fig. 19. Transferred image on paper.

Fig. 20. Final images obtained with indirect dabbing technique.

Printing

The images obtained from the exploration (direct and indirect dabbing technique) were transferred onto a screen after a few adjustments such as checking of repeat with a computer software (Adobe Photoshop CS6). The hand screen printing technique was adapted to print these designs with water-based print paste onto fabric for decoration and apparel uses. Figures 21(a) and 21(b) show the printing process.

Fig. 21. Printing process

Results and Discussion

The study explored two dabbing techniques to transfer images from natural and artificial objects. These techniques (Direct and Indirect) helped in the acquisition of images that were a perfect fit for the hand-screen printing method. As established in the literature, designers keep researching to discover new tools and methodologies that will help invigorate people's creative skills in their practices [27]. To substantiate the authors' studio exploration, decorative pieces (wall hangings) and fabrics were printed with the hand screen printing method. Table 1 presents the outcome of the study.

Table 1. Results of the study

No.	Technique	Result/Product	Description
1	Direct dabbing		A screen-printed piece of fabric
2	Direct dabbing		A wall hanging with a dimension of 16 x 20 inches
3	Indirect dabbing		A three-yard screen-printed fabric
4	Indirect dabbing		A wall hanging with a dimension of 17 x 24 inches

Product 1

The first work presented in Table 1 is a piece of screen-printed fabric made for apparel purposes. It originated from the direct dabbing technique where the negative images of found objects were dabbed and transferred onto a film for screen development. With the youth as a target, the fabric was printed in two bright colours (orange and yellow ochre). These colours are rich with vibrant appearance and are appropriate for the youth [28]. Both textures and motifs were obtained from the dabbing technique with a little modification with Adobe Photoshop. Attention was paid to the texture in the modification as it plays a major role in executing a designer's idea and influences customers' patronage of products in the fashion market [29]. A linear arrangement of the motifs creates half-dropped ovals in the entire design making it a unisex design for apparel. Printed designs with oval motifs or the like technically befit females as they look more feminine whereas designs with rectangular motifs look masculine, hence recommended for males [30, 31]. This buttresses the current submission that *product one* presented in Table 1 finds application in both male and female apparel design.

Product 2

The second work presented in Table 1 is a decorative wall hanging with a dimension of 16×20 inches. It is a monochromatic design surrounded by a polychromatic border. Aesthetically, the border design adds beauty and draws attention to the main design achieved with the hand screen printing method. The multi-coloured border design was achieved with the direct dapping process after printing the main design with a screen. In this process, a sizeable tuft of cotton was dipped into a container with water-based printing paste and dabbed directly at the edges of the printed design to create borders.

Practically, the viscosity of the printing paste used for the dabbing was made to be higher than that used for the screen printing. This was purposefully done to avoid migration or bleeding of dyes to undesired portions of the design. Technically, highly viscous printing pastes can withstand bleeding during and after printing due to the presence of thickeners which serve as a significant component of printing pastes [32]. Consequently, the drying time for the borders of the directly dabbed portions of the design was longer than that of the screen-printed portions. The screen-printed portions were also observed to be smoother both tactilely and visually with fine edges than the dabbed borders of the design due to proper absorption of dyes by the fabric. With the direct dabbing technique, however, a high amount of the printing paste was adsorbed rather than absorbed. Notwithstanding, the technique creates room for easy acquisition of multi-coloured designs simultaneously, unlike screen printing which needs separate/several screens to print a multi-coloured design.

Product 3

The third article shown in Table 1 originated from the indirect dabbing process explored in the study. It is a three-yard hand-screen printed fabric meant for adults or the aged. Before the screen-printing technique, images were dabbed from found objects including plastic spoons, macramé cords and a pen. These images were captured onto the foam and later transferred onto the computer for a few adjustments and checking of repeat with the Adobe Photoshop software. As a result, the motifs and textures in the printed cloth looked more refined and well-calculated with regular repetition. It's a one-coloured printed fabric; black on a yellow background designed for apparel purposes. These colours were chosen with the colour preference of the aged in mind. In a study on colour preference, *M. Dittmar* [33] opines that both sexes of elderly people choose cool colours over warm colours. *A. Torres, et al.* [34] however observed that most elderly people prefer warm colours while others prefer cool/dull colours in interior spaces depending on the room type. To address this in the study, a warm colour (yellow) was chosen as

a background colour to complement an achromatic colour (black) to obtain a fabric with a balanced colour intensity (neither hot nor dull). Although the elderly are the target group of the design, its fancy nature makes it worth accepting by the youth.

Product 4

The final piece is a decorative wall hanging obtained from the indirect dabbing and screen-printing method. It comes in a dimension of 17×24 inches. The indirect type of dabbing technique was adopted to capture images from items such as electrical cables, cords, marker pens, and spoons. A screen was developed with the captured images for the printing aspect. Black and orange water-based printing pastes were used for the printing on a mercerised cotton fabric. With a careful look at the piece presented in Table 1, several abstract images are recorded from the entire design. Images such as a microphone at the bottom left, a guitar at the top right, and a dancer in an orange outfit at the top-middle part of the piece. These images conceptually showcase a merry-making environment. The abstract images and colour combinations in the design are perceived to have the ability to arouse emotions and psychologically heal stressed minds [35]. As *M. Corrado et al.* [36] opine, creativity in the field of art universally can heal traumatized people.

The abstract images were obtained from the studio practice which makes dabbing a more innovative and conceptual approach to image acquisition. It could be said that, although abstract images were obtained serendipitously with the indirect dabbing technique as seen in the fourth product, how the found objects are arranged on the foam partly informed the outcome.

Conclusions

Images play a significant part in the artist's quest to communicate effectively with his creation. Cameras have been paramount tools in capturing images over the years in the art discipline for studio practices, including textile printing. Although images could be acquired through the use of cameras, drawing, sketching, etc., the need to explore other means becomes relevant in situations where the aforementioned means become inaccessible to the artist. The main objective of this study was to explore innovative approaches to the acquisition of images for the preservation of hand-screen printing techniques. Two dabbing techniques (direct and indirect) have been presented comprehensively in the study. Findings show that images captured from found objects with the dabbing technique are more significant in the production of textile art pieces for decorative and apparel purposes. Consequently, four articles (two decorative pieces and two printed fabrics) are presented as the outcome of the studio research. The study has created a great insight into the sourcing of images for hand screen printing. It is therefore recommended that artists/learners would pay attention to the use of found objects in studio explorations in order to sharpen their creative abilities as well as minimize waste generation as support to the Zero-waste agenda. It is also recommended that the hand screen printing technique should be preserved due to its importance to textile studio practitioners and consumers, especially in local communities where sophisticated machines are not available for textile printing.

References

[1] H.C. Koch, D. Schmelzeisen, T. Gries, *4D Textiles Made by Additive Manufacturing on Pre-Stressed Textiles—An Overview,* **Actuators**, **10**(2), 2021, Article Number: 31, https://doi.org/10.3390/act10020031.

[2] E.M. Keefe, J.A. Thomas, G.A. Buller, C.E. Banks, *Textile additive manufacturing: An Overview,* **Cogent Engineering**, **9**(1), 2022, Article Number: 2048439, https://doi.org/10.1080/23311916.2022.2048439.

[3] M. Wirth, K. Shea, T. Chen, *3D-printing textiles: multi-stage mechanical characterization of additively manufactured biaxial weaves*, **Materials & Design**, **225**, 2023, Article Number: 111449, https://doi.org/10.1016/j.matdes.2022.111449.

[4] C. Treadaway, *Developments in digital print technology for smart textiles,* in: **Smart Clothes and Wearable Technology** (Editor: J.M.D. Bryson), Woodhead Publishing, 2009, pp. 300-318, https://doi.org/10.1533/9781845695668.3.300.

[5] S.M. Shang, *Process control in printing of textiles,* in: **Process Control in Textile Manufacturing** (Editors A. Majumdar, A. Das, R. Alagirusamy, V.K. Kothari), Woodhead Publishing, 2013, pp. 339-362.

[6] L. Dicken, C. Knock, D. Carr, S. Beckett, *The effect of the digital printing of fabric on the morphology of passive bloodstains,* **Forensic Science International**, **341**, 2022, Article Number: 111515, https://doi.org/10.1016/j.forsciint.2022.111515.

[7] J. Moxey, *A Creative Methodology for Idea Generation in Printed Textile Design,* **The Journal of The Textile Institute**, **89**(3), 1998, pp. 35-43, https://doi.org/10.1080/00405009808658681.

[8] Y. He, *Extension of Meanings: Text and Image in Contemporary Chinese Photographic Works,* **Photography and Culture**, **15**(3), 2022, pp. 279-296, https://doi.org/10.1080/17514517.2022.2142015.

[9] E.K. Buami, R. Gbadegbe, J.K. Kassah, T.R. Makafui, *Beads as Motifs in African Print and Contemporary Fashion and Interior Trends,* **Journal of Textile Design Research and Practice**, **10**(3), 2022, pp. 317-333.

[10] C. Aust, *The Afterlife of Early ModernImages of Jews,* **Textile**, **21**(3), 2023, pp. 772-796, https://doi.org/10.1080/14759756.2022.2141031.

[11] S. Bethke, G. Pasternak, *Jewish Dress through Visual Sources: An Introduction,* **Textile**, **21**(3), 2023, pp. 560-570, https://doi.org/10.1080/14759756.2022.2150360.

[12] V. Cazac, J. Cîrja, E. Balan, C. Mohora, *The study of the screen printing quality depending on the surface to be printed,* **MATEC Web of Conferences, 22nd International Conference on Innovative Manufacturing Engineering and Energy - IManE&E 2018**, **178**, Article Number: 03015, 2018, https://doi.org/10.1051/matecconf/201817803015.

[13] M. Ali, L. Lin, S. Faisal, I.A. Sahito, S.I. Ali, *Optimisation of screen-printing process for functional printing,* **Pigment & Resin Technology**, **48**(5), 2019, pp. 4560463, https://doi.org/10.1108/PRT-05-2019-0043.

[14] B. Ruben, S. Naylor, M. McDonald, *Value and Cultural Voice in Australian Aboriginal Textiles,* **Textile**, **18**(4), 2020, pp. 451-464, https://doi.org/10.1080/14759756.2020.1767494.

[15] M.J. Adams, D.D. Fraux, J.L. Rieber, *Printing technology,* 3rd edition, Delmar Publishers Inc, 1988.

[16] E. Agyarkoh, S.M. Sumaila, *Digitalisation of Commercial Serigraphy in Ghana,* **Journal of Arts & Humanities**, **10**(4), 2021, pp. 1-20, https://doi.org/10.18533/jah.v10i04.1831.

[17] C.K. Ntim, S.P. Ocran, R. Acquaye, *Digital Textile Printing: A New Alternative to Short-Run Textile Printing in Ghana,* **International Journal of Technology and Management Research**, **2**(1), 2017, pp. 60-65, https://doi.org/10.47127/ijtmr.v2i1.51.

[18] X. Li, N.B. Powell, S. Michielsen, *Print clarity on digitally printed textiles – a quantitative evaluation,* **The Journal of The Textile Institute**, **111**(1), 2020, pp. 108-121 https://doi.org/10.1080/00405000.2019.1622273.

[19] B. Gooby, *The Development of Methodologies for Color Printing in Digital Inkjet Textile Printing and the Application of Color Knowledge in the Ways of Making Project*, **Journal of Textile Design Research and Practice**, **8**(3), 2020, p. 358-383, https://doi.org/10.1080/20511787.2020.1827802.

[20] Rosemary, *A Brief History of Screenprinting,* **Book Arts**, 2019, https://wnybookarts.org/a-brief-history-of-screenprinting/

[21] M. Bunyan, *The Delicious Fields: Exploring Man Ray's Rayographs in a Digital Future,* **The University of Queensland Vanguard Magazine: "Man Ray: Life, Work and Themes", Triad Series No. 2,** 2004, pp. 40-46.

[22] Y. Zhu, *Comparing the Effects of Different Types of Cultural Inspiration on Design Creativity,* **The Design Journal**, **23**(6), 2020, pp. 919-930, https://doi.org/10.1080/14606925.2020.1825173.

[23] N. Tinkham, *Screen Printing: The process,* **Keetons**, 2013, https://keetonsonline.wordpress.com/2013/04/18/screen-printing-the-process/.

[24] S. Adu-Akwaboa, **Art for Schools and Colleges***,* First edition, Kumasi-Samarg Publication, 1989.

[25] W. Badoe, K. Samadu, C. Frimpong, *Exploration of Innovative Techniques in Printed Textile Design,* **International Journal of Innovative Research & Development**, **4**(10), 2015, pp. 199-1211.

[26] S. Quansah, K. Safo-Ankama, *Innovation in Developing Textile Designs Directly Onto Screen without the Use of a Diapositive,* **Arts and Design Studies**, **46**, 2016, pp. 67-83.

[27] J. Vita, *A dialogue about experiences of collaboration in design practice,* **The Design Journal**, **26**(1), 2023, p. 173-183, https://doi.org/10.1080/14606925.2022.2144551.

[28] S.H Patel, *Colours preferred by Today's Youth in their Rooms,* **Remarking**, **2**(11), 2016, pp. 53-55.

[29] L. Gong, J. Shin, *The Innovative Application of Surface Texture in Fashion and Textile Design,* **Fashion & Textile Research Journal**, **15**(3), 2013, pp. 336-346, https://doi.org/10.5805/SFTI.2013.15.3.336.

[30] H.R. Lee, J. Kim, J. Ha, *Neo-Crosssexual' fashion in contemporary men's suits,* **Fashion and Textiles**, **7**(4), 2020, pp. 1-28, https://doi.org/10.1186/s40691-019-0192-2.

[31] Swami Vivekanand Subharti University, **Textile and Fashion Design***,* 2021, New Delhi: Publishers Grid, 2021.

[32] M. Abdelrahman, S. Wahab, H. Mashaly, safya Ali, D. Maamoun, T.A. Khattab, *Review in Textile Printing Technology,* **Egyptian Journal of Chemistry**, **63**(9), 2020, pp. 3465-3479, DOI: 10.21608/EJCHEM.2020.23726.2418.

[33] M. Dittmar, *Changing colour preference with ageing: A comparative study on younge and older native Germans aged 19-90 years,* **Gerontology**, **47**(4), 2001, pp. 219-226, https://doi.org/10.1159/000052802.

[34] A. Torres, J. Serra, J. Llopis, A. Delcampo, *Color preference cool versus warm in nursing homes depends on the expected activity for interior spaces,* **Frontiers of Architectural Research**, **9**(4), 2020, pp. 739-750, https://doi.org/10.1016/j.foar.2020.06.002.

[35] Y. Dabbous, *Fabric Heals: Analyzing Conceptual Textile Work at a Beirut-Based Art School,* **Journal of Textile Design Research and Practice**, **10**(2), 2022, pp. 121-140, https://doi.org/10.1080/20511787.2022.2125219.

[36] M. Corrado, D. Wolf, L. Bills, *Trauma triptych: inviting cross-disciplinary collaboration in art therapy, social work, and psychiatry,* **International Journal of Art Therapy**, **27**(4), 2022, pp. 169-181, https://doi.org/10.1080/17454832.2022.2123011.

Received: June 02, 2023
Accepted: May 20, 2024