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Evaluation of the EZ Print Technique for Silk Screen Printing for Independent Design and Production by Children

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Abstract

Children's creative potential is often constrained by adult intervention, particularly in structured educational settings. While adult involvement—especially by teachers—is typically necessary during the design and production phases of art and design education, primarily to support the use of technology, it can inadvertently limit children's autonomy. This study evaluates the EZ Printing approach to silk screen printing as a child-friendly alternative that minimises the need for adult facilitation. Unlike traditional methods, which demand considerable skill and adult supervision, the EZ Printing technique simplifies the process, making it more accessible to young learners.

The principle of minimal adult involvement was extended to the design phase as well. Findings from the study indicate that the EZ Printer method is more suitable for children due to its ease of use, being faster, more cost-effective, less error-prone, and safer. Most importantly, it empowers children with greater ownership of the production process, fostering independence and enhancing their creative engagement.

Key Words: independent design, silkscreen printing, minimal adult involvement

1. INTRODUCTION

Often in school, when children are engaged in designing, they are not completely independent of the assistance and involvement of an adult. Much has been written about children engaged in design with the involvement of adults and how it has an impact on design outcomes. Often, this involvement and assistance in the classroom is a necessity of pedagogy, as the children do not have the required skills to use equipment and technology to produce designs. When adults are involved in this way, the creative process is owned by adults rather than the children.

This study aims to find a way for children to take full ownership of the creative process with the absolute minimal involvement from an adult. Specifically, the study involved allowing children to create their own designs to be printed onto fabric items using silk screen printing. Unfortunately, the technique of silk screen printing requires a level of skill and needs to be taught, and often the adult has to teach the child how to use the silk

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screen or help them set it up. Therefore, the study used the EZ printer. This is an automatic silk screen printer easy to use for children and does not require adult intervention. Moreover, it serves an additional purpose of evaluating the suitability, ease of use and safety of the EZ printer for screen printing by children without adult involvement.

The children who participated in the study were allowed to create designs first and then reproduce those designs onto textile items without adult influence using the EZ Print silk screen technique. It is envisaged that the resulting designs will reflect the fact that children were allowed to design and produce independently without the involvement of an adult, and exhibit signs of being purer from the child's imagination and less influenced by convention and pedagogy.

2. PRELIMINARIES

2.1 Adult Involvement and Influence

This study is grounded in the premise that when children are given the autonomy to engage in creative activities independently, they are less susceptible to adult influence—an effect that can enhance the quality and originality of design outcomes. Adults typically engage children in the design process through many types of intervention, including instruction, encouragement, advice, feedback, technological assistance, and evaluative judgment. Each of these forms of involvement can significantly shape and, at times, constrain a child's creative expression.

Even when adults adopt a facilitative role—such as supporting children in using design-related technologies—their presence often becomes more directive than intended (Read et al., 2002). Such involvement may inadvertently hinder the child’s creative agency. Gardner (1990) highlights the impact of classroom learning on artistic development, a concern echoed by Roth (1996), who identifies three specific ways teachers influence children's design choices: suggesting forms and shapes, offering improvement strategies, and limiting access to materials. Similarly, Einarsdottir et al. (2009) argue that adult provisions and support inevitably shape children's design processes.

Teachers often prioritise skill acquisition and material familiarity as prerequisites for design production, with creativity considered a secondary outcome (Burkitt et al., 2010). While technical competence is undeniably important, this study posits that the use of silk screen printing—a technique requiring minimal skill—can reduce the necessity for adult intervention. By minimising technical barriers, the method allows children greater freedom to explore and express their creative ideas independently.

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2.2 Child-led Independent Design

Closely related to the area of child-led independent design is the idea of pure art. The idea of pure art basically says that whatever a child produces is a pure representation of their imagination, and this is tainted by pedagogy (Cizek, Viola,1942, Dubuffet, etc). Franz Cizek did not feel that there should be a set teaching way and believed that minimal intervention by an adult was the best way to foster a child's imagination and creative tendencies. Jean Dubuffet coined the phrase 'art brut', meaning raw art (Dubuffet.com, 2003) that was free of influences.

Children possess distinct aesthetic preferences that often diverge from those of adults. However, the design process frequently involves adult consultation, which can inadvertently shape or constrain children's creative choices (Druin, 2002). Advocating for minimal adult intervention, McArdle (2001) emphasised that when children are allowed to create independently, their artwork gains intrinsic value through spontaneous expression and genuine creative freedom.

2.3 Silk Screen Printing

Silkscreen printing originated in China and then further developed by the Japanese, who introduced the use of silk. The technique involves imprinting a design onto any material, which could include wood, plastic or fabric, and the equipment includes the image itself, a screen, a scoop, a squeegee, some emulsion and a light source (Gibi, 2013). Because of its relative ease of use and cost-effectiveness, the technique is widely used by clothing companies and artists, and although it is now used on an industrial scale, it is still very popular with individual designers (Gibi, 2013).

3. METHODOLOGY

The methodology was aimed at providing children the opportunity to first create designs, and second, print those designs onto fabric items. For the former, the methodology of the study included a design exercise where the children were free to create their designs on paper, and for the latter, an exercise that allowed the children to print their designs onto fabric items, which included t-shirts, bags, cushion covers, pillow cases and curtains.

4. THE DESIGN AND PRODUCTION PROCESS

4.1 Design Exercise

The central aim of this study was to explore how children can design and produce creative work with minimal adult involvement. Accordingly, both the design and production processes—particularly the use of the EZ silk screen printing technique—were intentionally structured to exclude adult participation. Every aspect of the design exercise was carefully

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considered, including the presence of adults, the materials provided, and the nature of instructions, all of which were treated as potential sources of influence.

The design exercise was informed by research into participatory design involving adults, and was guided by criteria that prioritised child autonomy. These included fostering freedom and spontaneity, enabling a meaningful connection between the child and the final product, and promoting self-reliance. To preserve the integrity of this approach, the exercise was conducted without adult supervision, prescriptive instructions, evaluative feedback, or judgment—ensuring that the creative process remained entirely child-led.

4.2 Silk screen printing

The same principles that were applied to the design exercise were also considered in the production stage of the process. Specifically, there needed to be the least amount of adult involvement as possible. This could only be achieved through a technique that significantly reduced the need for adult involvement.

Silk screen printing is a technique that children can use, allowing children to independently produce items as the realisation of their designs can be a hands-on experience. Additionally, primary research has revealed that children enjoy working with textiles.

However, the traditional approach to silk screen printing involves many stages and requires a certain amount of skill. This is the reason that a certain amount of adult intervention is usually required for traditional processes. In a study by Madani (2013) the traditional silk screen printing method was used to transfer children's designs onto fabric items; the main aim of the study was to remove adult influence from the entire design and production process in order to achieve a completely child-centred process with no adult involvement or influence. Unfortunately, one of the limitations of Madani's (2013) study was that a certain amount of adult involvement was required because of the numerous steps involved. Moreover, the children found the process complex and difficult and often looked for the help of an adult. Thus, the aim of the study (to remove adult influence) was not fully achieved, leading to the need to consider a new approach to silkscreen printing.

Specifically, the traditional approach to silkscreen printing involves stapling an organdie to a frame, placing masking tape on the underside of the frame, preparing the emulsion by adding a photosensitive liquid and applying the emulsion to the outside surface of the organdie, which involves a certain level of skill to cover all of the material. The design needs to be printed onto a piece of transparent paper using an inkjet printer and placed onto a light source. The transparent paper is then placed onto the frame, and a piece of cloth is placed inside the frame and then filled with sand, which has to be distributed evenly to ensure that stray light is fully absorbed. The light is switched on to chemically etch the design onto

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the silkscreen, taking approximately 2 – 8 minutes in a dark room (Gibi, 2013). The frame is then washed and dried.

The silkscreen now has the design and can be used to transfer the design onto the fabric item. This is achieved by placing the frame onto the item and then adding the paint, which is drawn across the silkscreen using a squeegee. Thus, the traditional approach involves many steps and requires a certain level of skill and judgement, which needs to be taught to the children. If any of these stages are not done correctly, it can affect the quality of the print.

The traditional method of silk screen printing, besides involving many steps that require children to have a certain amount of skills and experience and is also a lengthy process, has several other disadvantages, including a proneness to mistakes. For example, if the chemicals are not washed off properly or the sand is not distributed evenly, there is a waste of materials like chemicals and paint, and it requires an artificial light source. These disadvantages will become clearer when addressing the advantages of the EZ Printer approach to silk screen printing.

4.3 EZ Silk Screen Printing

By comparison, using the EZ printer to achieve silkscreen printing is a much simpler and user-friendly process for children. Here, two stages are explained: firstly, creating the EZScreenPrint stencil and secondly, transferring the design onto a fabric item.

4.3.1 Creating an EZScreenPrint Stencil

1. Creating the stencil involves the following steps:

a) The child creates the design on paper and then prints the design using an inkjet or laser printer. The printed design is then placed onto the exposure unit.

b) The protective backing of EZScreenPrint Stencil is then peeled off, and the stencil is then placed onto the printed design and a black felt board is placed onto this and then all layers are fastened with clips.

c) The unit is then turned over, and a piece of black foam is placed on top, which is kept in place until the user is ready to expose the unit to light.

d) The black foam is removed to expose the unit to direct sunlight for approximately 1 minute. Thereafter, the black foam is replaced to avoid overexposure.

e) The stencil is then placed in tap water for a minimum of 15 minutes and then rinsed before being dried in sunlight, after which the stencil is ready to use.

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4.3.2 Printing the design onto a T-shirt

1. The stencil is placed onto the fabric item. If doing multiple prints, a plastic frame should be used to prevent ink from going onto the fabric item. A piece of cardboard is then placed inside the fabric item to prevent the ink from going to the other side.
2. A line of Speedball Screen Printing Ink is placed at the top of the stencil, which is then drawn across the stencil using a squeegee.
3. The stencil is then lifted to reveal the printed design.
4. The ink is then rinsed from the stencil before it dries.

Based on the process outlined, the EZ Printer method of silk screen printing is clearly more child-friendly due to its simplicity, fewer procedural steps, and minimal material requirements. Notably, the use of water alone to clean the stencil enhances both ease and safety. The approach also demands a lower level of skill to produce defect-free stencils, making it more accessible for young users. This distinction is particularly important given that traditional silk screen techniques require considerable precision and care to avoid errors, posing challenges for children.

More specifically, the traditional method of stencil preparation involves the use of paint and photosensitive chemicals, which require an extended drying time to properly etch the design onto the stencil. This process is further complicated by the need to wash off the residual paint and chemicals afterwards. Overall, stencil preparation using the traditional approach can take several hours. In contrast, the EZ Printer method streamlines this process significantly: etching the design with sunlight and rinsing the stencil can be completed in just a few minutes.

During the process of transferring the design onto the fabric item is also a simple process using the EZ stencil, which only requires four basic steps, and the stencil can be used repeatedly without the need to wash it.

5. RESULTS

By engaging in the design exercise and using the EZ print technique to produce their designs, the children were allowed to be creative without the involvement and influence of adults. The results of this exercise were many creative fabric items which exhibited designs created in a design and production process where the children took full ownership. Specifically, the children printed their designs onto t-shirts, cushion covers, bags, pillowcases, duvet covers and curtains, which are presented below.

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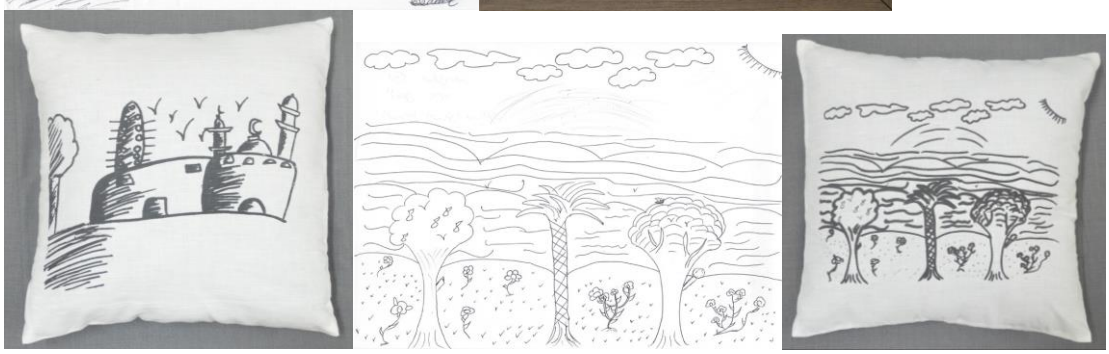

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The children felt that they had full control of both the design and production, and appreciated the opportunity to be independent. Moreover, the children acknowledged that using the technology was very easy and were not concerned about having the required skills for silk screen printing. It is important to note that there were no errors in the designs, and items were of a high-quality finish.

As the EZ technique only required the use of a stencil and a simple frame, which was only necessary for keeping paint off the rest of the item and would not be necessary if care was taken, it was easy to use on many different items, especially larger items such as curtains and duvet covers.

8. CONCLUSION

In conclusion, this study aimed to evaluate the EZ Print technique for silk screen printing as a tool that will allow children to produce their designs without the need for adult involvement and, consequently, adult influence. The evaluation was carried out in the form of a practical design exercise, where it was shown that the EZ Print technique was not only suitable for allowing children the opportunity to be creative without adults, but was also a much quicker and simpler technique than traditional silk screen printing. Additionally, the EZ printer technique was more suitable for children because it used safe materials.

The overall aim was to allow children to be independently creative by removing the need for an adult. Adult involvement is often necessary because of the techniques involved. Further research may be the evaluation of other techniques that can be used for producing designs by children, such as clay modelling or 3D printing, which allow children to work independently.

This approach to allowing children to design and produce their ideas independently can make two major contributions to the world of art and design and education. Firstly, this study has shown that there is a possibility for a new approach to teaching art and design to children, or at least that current pedagogical approaches need to be addressed in terms of the extent and type of teacher involvement. Secondly, because the children produced designs that were uninfluenced or less influenced by adults, it opens a new possibility for a paradigm shift in art and design by children.

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