

The Non-Toxic Contemporary Approach to Teaching Printmaking Art

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Abstract

Printmaking is a universally acknowledged and widely practiced discipline of art and art education that has historical roots going back several centuries. Unfortunately, most traditional printmaking techniques were invented hundreds of years before the concepts of occupational health & safety and environmental awareness were developed. Consequently, issues related to ecological conservation, health and safety have not been fully reconciled with the traditional practices of printmaking art. Meanwhile several printmaking educational programs especially in the US and Europe have already adapted to the contemporary Non-Toxic approach to teaching printmaking art, printmaking educational art programs in the Middle East are still grappling with the traditional concepts and teaching restrictions of “Original printmaking”. This research investigates different health and ecological aspects related to teaching traditional printmaking techniques, and suggests other relevant Non-Toxic alternatives.

Keywords: Printmaking Art , Non-Toxic Printmaking , Printmaking Art Education.

1. Objectives

The prime goal of this project is to update the conventional practices of printmaking art in the traditional Art programs by introducing the contemporary interdisciplinary concepts and methodologies of non-toxic printmaking. Despite the profound changes in the world of art, it seems that the academic teaching of printmaking art in the Middle East is still captivated by the past. Teachers and students in traditional printmaking programs continue to endanger their health by working with very hazardous materials in an improperly equipped Environment; this research aims to provide them with safer alternatives to work with. Technically this project aims to determine the most efficient and safest methods of design and printing systems that would be applicable in the traditional printmaking programs.

2- Significance

The importance of this research emerges from the fact that it attempts to narrow the wide gap of concepts and practices of teaching contemporary printmaking art, between the non-toxic and the traditional printmaking programs. This research offers a different perspective of printmaking art, and could form a nucleus for radical changes in the way printmaking art is being taught, practiced, and even conceived. In addition, this research is the first attempt to introduce safer printmaking alternatives for Middle Eastern printmaking students and teachers who are not aware of full extent of the health dangers that they are exposed to during their daily practices in the printshops. In the same time, this project opens the eyes of the Middle Eastern students and artists on a wide range of methodologies and techniques. In addition, this research suggests alternative printing systems for many printmaking artists who do not have an access to a traditional printshop.

3- Introduction

According to a 1978 publication entitled "Health and Safety in Printmaking: A Manual for Printmakers", published in Canada by the Alberta Labor, Occupational Health and Safety Division in Edmonton, there are 112 toxic and noxious substances commonly used by practitioners of traditional Printmaking media. Some of these hazardous chemicals and solvents are nitric, hydrochloric, sulfuric, hydrofluoric acids; benzene, turpentine, lacquers thinner, and acetone solvents. French chalks, caustic sodas and ultraviolet radiation from photo exposure unites are also dangerous but to less extent. Rosin and Asphaltum dust can be explosive. Splashing of acids, (a common practice among students) may cause skin burns and eye injuries. Accidental oral ingestion and

inhalation of toxic materials is common. Tiny chemical particles deposit on food and cigarettes, inhaled cigarette smoke carries airborne vapors and poisonous fumes deep into the lungs. Studies have shown a significantly elevated risk of exposure related disease among commercial printing workers and master printmakers along with a high percentage of contact dermatitis. Health consequences include but not limited to birth defects, central nervous system damage, asthma, emphysema, allergic sensitization, severe burns from which gangrene may follow, systemic poisoning which affects the lungs, liver, kidneys, heart, nervous disorders, skin eruptions, damage to the upper respiratory tract. Because most traditional printmaking studios use many of these products simultaneously, the accumulated effect and the resulting health damage related to combining these toxins is unknown. Ultimately, there is one question that Printmakers should be asking themselves, are the toxic traditions of the past really worth dying for?

Medical historians have speculated that many of the old masters experienced illness and even death because of the materials they used for instance, (Francisco Goya (1746-1828) suffered excruciating illness, medical historians have attributed his sickness to lead poisoning (lead pigment is widely used in printing inks). Goya suffered the symptoms of depression, paranoid thinking, impaired hearing and vision, coma, and personality changes. Due to the complexity and variety of printmaking materials and chemicals that are being used nowadays many contemporary printmakers are suffering different degrees of wide range of health complications.

The use of toxic materials in the printshop have a further drastic negative impact on the environment. Airborne poisons and toxins released from the print shops as a result of chemicals interactions are usually exhausted directly into the surrounding environment without any filtration. Other liquid and hard wastes if not recycled properly pose undeniable threat to the environment. Ultimately these practices if not addressed contribute to an ecological devastation at epidemic proportions that affects us all.

Even if some programs of traditional printmaking are capable and willing to dedicate thousands of dollars to install monitoring, ventilation and vapor extraction systems to protect teachers- students indoors and filtration and recycling systems to preserve the environment, they still have to face the problem of subject redundancy. Students instructed in traditional toxic printmaking techniques under these highly controlled conditions cannot be expected to pursue their art outside of the controlled confines of the educational establishment, which leads to the diminishment of the art of printmaking. Here emerges the question, what traditional printmaking programs can do about these problems?

In the United States and in many European countries such as the U.K. researchers and artists scramble feverishly to replace the old toxic techniques in order to comply with the strict health & safety and environmental legislations that enforce traditional art programs either to adapt to the non-toxic methodologies or to eradicate printmaking from their fine art curriculums. On the other hands, traditional printmaking programs and artists are still grappling with the same historical methods and hoping for the best. Knowing so little or none about the internationally growing safety & health warnings, traditional printmaking art teachers and students unsuspectingly continue to endanger their health and their environment by utilizing very hazardous chemicals in improperly equipped studios. Printmaking teachers and students in traditional printmaking programs usually handle different chemicals and suffer countless health consequences caused by the inhalation of the poisonous fumes and the direct exposure to cancerous substances. Here rises the question; do Printmaking Artists, teachers and students have to sacrifice their health for the sack of art? Actually the simple answer is no. What printmakers need to learn about is how to make the shift toward non-toxic methods, which in many different ways represent excellent alternatives to the traditional ones.

But first what is non-toxic printmaking? Why is it particularly the best venue to pursue for printmaking educational programs in the Middle East?

4- Non-Toxic Printmaking

In 1972 the concept of non-toxic printmaking was initially introduced to the art community on the hands of Dan Welden, an Australian artist, who invented the first photopolymer plate which later was presented to the artists as a substitute to the traditional metal plates. Welden chose the name (Solar Plate) to his new invention, which excluded the usage of acids, varnishes and organic solvents from the intaglio process. In the late seventies Dupont, an American industrial corporation, manufactured (Riston), the first photopolymer film, originally used

in the circuit industry and artistically utilized in 1994, when the American artist Mark Zaffron employed it successfully in producing prints of consistent quality and that was an extraordinary breakthrough eliminated the dependence on the traditionally used poisonous photo-etching compounds.

In 1998 Dupont in consultation with Professor Keith Howard of Rochester institute developed a new photopolymer film specially designed for printmaking purposes and since then the new film, (Imagon), has been widely utilized by a growing number of printmaking artists, teachers and students in the USA, Europe, Australia and Asia. The green revolution of non-toxic printmaking has simultaneously extended to other areas of the art with the invention of polyester lithographic plates and waterless lithography, which considered by many artists as excellent safer alternatives to the traditional stone lithography process.

Recently as a result to the huge evolution of the digital media, and the sophisticated capabilities of modern digital printers, scanners, digital cameras, copying machines and computer design programs, a new trend of integrating digital imagery with Non-Toxic printmaking techniques have been adopted by many contemporary artists who are lured by the interdisciplinary creative possibilities of the digital media, and utilized them in various approaches in a pursuit to intensify the visual and /or the conceptual experience of the audience. Contemporary Non-Toxic printmaking techniques include but not limited to electro-etching, Bordeaux etch. Galv.etch., Fractint ,Polymer Intaglio, Collagraphy, thermal imaging, Paper plate lithography, Polyester plate lithography ,waterless lithography ,Sand paper mezzotint and toner transfer techniques.

These developments in the printmaking processes have affected every aspect of the practice but most importantly the creative experiment of the artist/student. Unlike the conventional processes, non-toxic techniques offer the students/artists a significant degree of freedom, spontaneity and control over the design in addition to much accurate anticipation of the printing results. In addition, non-toxic printing methods have opened the door wide for the imagination of the contemporary artist. The limitless options of integrating, generating and manipulating images and/or drawings push the creative vision of the student/artist to its limit. By utilizing non-toxic printing methods, students and artists can focus on expressing the intellectual and the emotional content of their work without being interrupted by the complexity of prolonged technical considerations and calculations.

Even though the trend of shifting toward non-toxic printmaking is relatively new, the reality that no one can ignore is, non-toxic prints have accomplished an extraordinary degree of success during the past few years. Winning very prestigious awards from the most prominent international Exhibitions, non-toxic prints have started to attract more attention and to gain more respect, but most importantly, they have proven that the art of printmaking today is less about craftsmanship and more about expression, creativity, and content. In other words, non-toxic printing methodologies have redefined the contemporary art of printmaking.

5- Conclusion

Finally from an academic perspective, the researcher believes that, the shift toward non-toxic methodologies would be particularly imperative for the less privileged printmaking programs and artists, not only as a safer approach to the art practice but also as an efficient affordable option. As a result of the soaring prices of many of basic traditional printing materials (such as Zinc & copper plates for Intaglio printing) , students and artists are forced to work less and on smaller scales. Teaching some printing techniques (such as Lithography) in the Middle Eastern printmaking programs has already been disrupted due to the unavailability of the imported lithographic stones. Non-toxic methodologies could present a radical solution for these problems by employing efficient and readily available materials. I believe that the time has come for printmaking programs in the Middle Eastern countries to show responsibility and adopt non-toxic printing techniques to protect the health of their students and teachers, to save the environment and to keep the art of printmaking alive.

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