

Upcycling of Derelict Furniture in the University of Jordan

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Abstract

The present study investigates the amenability of the recycling of derelict furniture in the University of Jordan into an aesthetic language which could be read to produce new pieces of furniture using a new artistic and functional formulation which interacts with the individual while fulfilling his needs, through posing a set of questions: what are the mechanisms on which the student relied to recycle the derelict pieces of furniture in the University of Jordan? How did the recycling of discarded pieces of furniture in the University of Jordan contribute to limiting environmental pollution coupled with obtaining economic benefits? How did the student fashion the old pieces of furniture into contemporary design elaborations? The author conducted a descriptive analytical study of purposive samples numbering five groups of samples, the study reached numerous conclusions, foremost of which: the student succeeded in reformulating the designs of old furniture based on modern versions, in terms of form and content, and the recycling mechanism by relying on merging the old materials with new materials which coalesce to produce a new version, both functionally and aesthetically. Moreover, the mind of the student is stimulated and provoked through laying the basis for reformulating the relationship of the individual to the environment through raising his awareness of the importance of recycling and prodding him visually to savor what is generated by art as a consequence.

Keywords: Upcycling, derelict furniture, The University of Jordan, workshops.

إعادة تدوير الأثاث المهمل في الجامعة الأردنية

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ملخص

تبحث هذه الدراسة في قابلية إعادة تدوير قطع الأثاث المهملة في الجامعة الأردنية إلى لغة جمالية يمكن قراءتها لإنتاج قطعة أثاث جديدة بصياغة فنية ووظيفية تتفاعل مع الإنسان وتلبي احتياجاته، من خلال طرح مجموعة من التساؤلات: ما هي الآليات التي اتكأ عليها الطالب لإعادة تدوير قطع الأثاث المهملة في الجامعة الأردنية؟ كيف ساهمت إعادة تدوير قطع الأثاث المهملة في الجامعة الأردنية في الحد من التلوث البيئي والحصول على فائدة اقتصادية؟ كيف شكل الطالب قطع الأثاث القديمة في صياغات تصميمية عصرية؟ أجرى الباحث دراسة وصفية تحليلية لعينات قصدير وعددها خمسة مجموعات وبعد دراسة تحليلية لمجموعة من النماذج خلص البحث إلى العديد من النتائج أهمها: نجح الطالب في إعادة صياغة تصاميم الأثاث القديم بصياغات معاصرة، من ناحية الشكل والمضمون، وآلية إعادة التدوير بالاعتماد على المزاجية بين الخامات القديمة وبث خامات جديدة تتواشج لإنتاج صبغة جديدة وظيفيًا وجماليًا. تثوير عقل الطالب من خلال التأسيس لإعادة صياغة علاقة الإنسان بالبيئة من خلال توعيته بأهمية التدوير وجعله يتذوق بصريًا ما ينتجه الفن الناتج عن ذلك.

الكلمات الدالة: إعادة تدوير، الأثاث المهمل، الجامعة الأردنية، مساق أعمال مشاغل.



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Introduction

The art of recycling is considered to be among the features of the modern age, and acquiring myriad forms at the level of form and the mechanism of producing the discarded material- which is functionally defunct or expired- into material that is viable, through generating fresh energy and converting its old trajectories into new trajectories, and create solutions and alternatives that contribute to lessening the natural and environmental burden which is accentuated by chronic waste as a result of the consumption philosophy which prevails in the present age.

The notion of converting waste and recycling it, constitutes a source of considerable concern in the Western and Arab worlds, while art made a complementary contribution to reducing visual and environmental pollution in the history of art, where the artist was inclined to simulate and interact with this problem in variegated domains, and many artistic schools emerged which adopted recycling as a method and means for formulating its artistic activity, and derelict furniture is considered a part of waste material whose recycling the designer sought to implement through new versions.

The present study focuses on recycling derelict furniture in the University of Jordan through the workshops activities course in the Faculty of Arts and Design, in order to spread a culture of effectively dealing with derelict material and furniture which has become a visual and environmental hindrance on the university campus, while investigating the mechanisms of the student working on derelict furniture and recycling it in terms of designs, as relates to the design visions, given that the old furniture of the university is characterized by design patterns that belong to the sixties of the previous century, insofar as design and the mechanism of production. In this context it is necessary to study the levels of recycling by the students of the derelict furniture in terms of numerous aspects, most importantly the material and recycling it using the mechanisms of elimination and addition, and using new materials that were not available in the period of the production of this furniture. Moreover, the research sought to study the analysis of the pieces of furniture in its new format by relying on its form and its old material which inspired the new artistic pieces, and how the designer chose to offer a modern vision relating to producing harmony between old and modern materials based on a modern vision.

Research Problem

The University of Jordan is in possession of a large amount of derelict pieces of furniture that may be recycled and renewed, and it lacks an efficacious technical capability to destroy and renew them. The present study problem is represented in the method of recycling the derelict pieces of furniture in the University of Jordan into a language that is readable through new pieces of furniture of an artistic and functional elaboration that interacts with the individual and meets his needs, and accordingly it would be possible to define this problem in the attempt to answer the following questions:

- 1- What are the design techniques and methods on which the student relied to recycle the derelict pieces of furniture in the University of Jordan?
- 2- How did the student form the old pieces of furniture in contemporary design elaborations?
- 3- How did the recycling of derelict furniture pieces in the University of Jordan contribute to limiting environmental pollution and deriving an economic benefit?

Significance of the Research

The study focuses on derelict furniture in the University of Jordan by concentrating on solid materials which can be recycled (glass, plastic, wood) to be recycled through innovative designs for pieces in internal spaces which encourage the spread of recycling in terms of the economic, environmental and social aspects, and shedding light on the role of the designer in offering a new and serious conceptualization while encouraging designers to present furniture designs that are attractive to encourage consumers to purchase recycled furniture, while fostering the acceptance of this idea.

The importance of the study is linked to shedding light on reproducing the relationship between the individual and his/her environment through protecting the environment and reproducing waste in artistic forms that could be functional or aesthetic; while endowing the Arabic library and the Jordanian library in particular with studies that are concerned with recycling waste for purposes of artistic creation.

Research objectives

- Identify the mechanism of recycling derelict furniture pieces in the University of Jordan insofar as raw materials and patterns of formation which contributed to elaborating new designs.
- Redesign and recycle the derelict furniture in the public spaces in the University of Jordan.
- Increase the economic and environmental benefit of the university by using its derelict and recycled furniture.

Research Hypothesis

The study departs from the assumption of the possibility of benefiting from marginalized materials and recycling them to become new so as to constitute an artistic work through recycling them in an artistic fashion to become of aesthetic value.

Research Boundaries

The boundaries are the University of Jordan (Faculty of Arts and Design) and the time frame is the second scholastic semester- Workshops Works course (2019-2020)

Research Methodology

The study adopted the analytical descriptive method in the study of the works of the students of the Faculty of Arts and Design in the University of Jordan in the Course of the Works of the Workshops and characterizing and analyzing them to attain the desired results.

Research community

The study population is composed of the totality (45) furniture pieces that were recycled by (45) students in the course of workshops works in the maintenance workshops of the University of Jordan.

Research Samples

The author conducted a descriptive analytical study of 14 purposive samples numbering five groups of samples, and each sample was divided as a group of works in a manner consonant with the common factors of the works in terms of form and content.

Theoretical framework

Section One: Recycling

The method and art of recycling has dominated the thinking of the advanced countries of the world and has become one of the major industries witnessed in the current century, and it spread noticeably in the latter period, while the recycling industry is considered to be among the distinguishing features of the advanced countries. Recycling may be defined "as the gathering of utilized materials, and converting them into raw materials, and then reproducing them to become materials amenable to consumption anew, and the concept of recycling could include anything that is old which may be used anew", (Grabianowski, 2020). And in other words it is "a process through which waste materials could be harnessed and utilized anew in the process of production and manufacture." (CalRecycle,1995), and the recycling processes include numerous materials such as iron, steel, glass, aluminum containers, wood, paper and other materials, (Encyclopedia Britannica Group, 1768)

Therefore, recycling is the process of reproducing and utilizing the waste of general products and the products of interior design in particular, that is the utilizing of the product more than once and recovery of the undesired and derelict materials in the form of waste such as paper, rubber, glass, and availing directly of them or utilizing them as raw materials in the production of new materials in a manner yielding economic and environmental benefits. (Abdel Khaleq, & Awwad, 2012, p. 37)

In our view the concept of recycling is a revival of dead materials which are of defunct functionality, and "recycling is the process of collecting and sifting waste or products that were previously used, and which are expired as far as the consumer is concerned, and re-manufacturing the sound materials and converting them to products or materials that are amenable to

use anew." (WARM, 2014, p.1)

The study investigates the recycling of derelict furniture in the University of Jordan and converting the pieces of furniture which have lost their function and recycling the raw materials of old furniture into modern furniture that is amenable to use through adding new raw materials such as wood, iron, plastic and other materials in new contemporary forms and patterns.

The concept of recycling appeared in the thirties and forties of the twentieth century as one of the important concepts in numerous countries of the world; due to the economic depression that transpired at the time, where in fact some materials were recycled such as nylon, rubber, and minerals (Grabianowski, 2020). Moreover, the recycling movement appeared in Italy in 1960, where the art that emanated from that was the "poor art", and the critics are of the view that by the term poverty is meant the discarded primary materials, while the artistic activities resulting from these materials have an aesthetic value which creativity confers upon it. And what can be recorded is that the art of recycling is based on materials distinct from those that the artists habitually utilize, and some critics called them, the "ignoble materials", and their lack of nobility is in brief their lack of value as a primary material, but the artist can convert them into artistic works of value through conferring his spiritual touch on them, and the art based upon recycling assumed for those artists a specific form, and with them the materials became essential for the artist.

The idea of recycling of waste and converting it into artistic works appeared in the wake of World War Two which left in its wake immense visual pollution which resulted from destruction and blocs of waste, whereby many artists resorted to recycling in the quest to restore some of the lost beauty to the cities due to the destruction and desolation, and they used the waste of war to produce their artistic works.

As to the art of recycling in terms of contemporary artists, they rebelled through it against what is prevalent, and they sought to express emphatic rejection of what nature is exposed to in violence as a result of waste, and they contributed to spreading awareness to protect it by aesthetic means, and they were also inclined to renewal and originality in their works (wordpress, 2017).

Many contemporary plastic artists have been inclined to convert what is valueless in terms of household and industrial waste such as plastic and aluminum containers, wires, textiles, cardboard, and glass into artistic works with aesthetic dimensions and values also removed from what is customary in traditional artistic schools. The concept of recycling penetrated all fields of life and all types of arts whether at the level of the portrait or sculpture or art installation, and art was oriented to multiple aspects in the elaboration of the artistic piece as a marketing product in the field of design and the recycling of derelict furniture.

The concept of recycling garnered considerable interest during the past few years, and stretched to encompass all domains, most importantly the field of interior design and the production of furniture. Thus many designers were inclined to re-use many raw materials, most importantly woods. And in Indonesia appeared what is named the "Boats furniture" produced from woods restored and derived from old boats such as mahogany and Tectona, instead of their use as fuel for cooking and heating. A company named the "Recycled Furniture Boat Company" agreed with the local fishermen to sell old boats and ships (Zahra, 2015, p.1)

The woods utilized in the production of furniture are old solid woods but they are not of expired age, whereby the woods of preserved solidness and sound fibers are selected. And it is possible to utilize those woods in the production of all pieces of furniture, whereby coffee tables, seats, chairs and storage units are produced. All of these are characterized by being friendly to the environment and are endowed with colored and ornamented surfaces which the woods of boats possess, and also every piece is considered rare and unique in design and colors where imitation and repetition is difficult as is shown in figure number (1) (Eichorn, 2008).



Figure 1

Eichorn, Kurt. (2008). *All from Boats / The Boat Wood Furniture Company, Indonesia, Recycled boat Furniture Company*, from <https://www.allfromboats.com/java-stock/boat-shaped-furniture>.

The furniture industry went through a crisis of many facets in the latter period, which spurred it to rely since several years ago on the designs of earlier eras on the one hand, and on recycling the raw materials on the other. Furniture companies are currently intensively exploring the old styles of furniture to be used on useful things which could be revived, and moreover the furniture companies are engaged in recycling what is abandoned into viable furniture, and there are numerous exhibitions which adopted recycling as a main theme as was evidenced in the Milano International Furniture Expo 2011 which is considered a source of inspiration for modern trends in the world of the production of furniture, where there appeared furniture pieces produced of all the raw materials amenable to recycling, such as stickers, plastic bottles, and sawdust, but the idea of recycling was not applied- according to the material- except within a limited scope.

The Milano Expo witnessed a strong return of plastic furniture, where furniture experts stated that plastic is distinguished by having a long presumed age, as well as an amenability for being formed and molded to an extent greater than any other raw material, which marks it with sustainability, and likewise the Expo concentrated on furniture produced from aluminum alongside wooden furniture, given that wood retains branches and holes produced by worms, and its unpolished veining where modern designs emphasize the natural appearance of wood. And this is what we observe in Figure number (2) where the Italian furniture company (Riva), presented a chair that is made of a wooden veining branch, (Milano, 2011). and also the Italian company Edra, famous for producing furniture of all types, presented a couch that is clothed with leather upholstery that is very large and with many folds as is shown in figure number (3), and Meritalia company that is specialized in designing high-quality furniture presented a couch with a Backrest in the form of clownish Acrobatic hats, as is shown in figure number (4). Other designers were inclined to reuse materials for purposes that differ from the original purposes; thus, the Croatian décor designer Dejana Kabiljo utilized a long hair postiche as a cover for a bar seat, as is shown in figure number (5), where Dejana said that she "has a philosophical vision which she tries to express through her designs, where it is possible to alter the form of the place by changing the hair style of the seat" (Al Anbaa Newspaper, 2014).



Figure 2

Milano- D.B.A. (2011). Modern Furniture of Recycled Materials, All Eamarat, All Eamarat Al Yawm.newspaper.



Figure 3

Al Anbaa Newspaper. (2014). *In Photos... A Croatian Décor Designer Innovates Chairs in the Form of Hair Postiches*, Kuwait, Elyoum Elsabe'a newspaper, 2014.



Figure 4

Al Anbaa Newspaper. (2014). *In Photos... A Croatian Décor Designer Innovates Chairs in the Form of Hair Postiches*, Kuwait, Elyoum Elsabe'a newspaper, 2014.



Figure 5

Al Anbaa Newspaper. (2014). *In Photos... A Croatian Décor Designer Innovates Chairs in the Form of Hair Postiches*, Kuwait, Elyoum Elsabe'a newspaper, 2014.

Recycling aims to stretch the lifecycle of products, components and materials through use of recycled environmental resources in the innovation of environmentally friendly new designs, and substantially reduce the amount of solid waste and various kinds of waste, whereby there is improvement of the use of resources and protection of the environment all at once given that recycling is not just a cause of economic benefits, but also entails environmental benefits.(Tra1,ShengQuan2, & Abdul Rehman, 2015, p. 1007).

The design of furniture has multiple levels of environmental importance. First of all, there is a recycling of various kinds

of waste, whereby one could eliminate and reduce the sources of pollution, and this represents the first level for designing furniture for purposes of protecting the environment. Secondly, furniture is basically a large amount of materials derived from harnessing the resources of forests, which is something that directly affects the renewal (regeneration) cycle of the ecosystem and the capabilities of cleansing. The products or components or materials of furniture recycling could lead to complete and effective reuse or converting or recycling them to achieve the maximum extent of benefiting from resources, which would lead to environmental balance and the implementation of the strategy of sustainable development (Tra1,ShengQuan2, & AbdulRehman, 2015, p. 1010).

Section Two: Recycling derelict furniture in the University of Jordan

The University of Jordan is a public governmental university which was the first university to be established in 1962. The University includes a constellation of centers and faculties whereby it has become a destination for educational tourism for neighboring countries in addition to hosting more than 50 thousand students on its campus (Majdoubeh, 2017, p.6).

Furniture in the University of Jordan has constituted an approach that simulates the historical period at the time of establishment that is the sixties of the previous century, and it had an impact on the educational experience involving the student, teachers and administration in equal measure, where the old furniture pieces were characterized by reliance on classical design that is dependent on function which does not take into consideration the artistic aspect of the piece of furniture; the designer at the time concentrated on the wood material which was the material punctuating the design context in the sixties and seventies of the previous century.

The University destroys annually hundreds of classroom chairs and office furniture and lots of other furniture which constitutes an economic and environmental burden owing to the costs of re-purchasing new furniture whether educational represented by classroom chairs and desks or administration represented by chairs, offices, closets and otherwise.

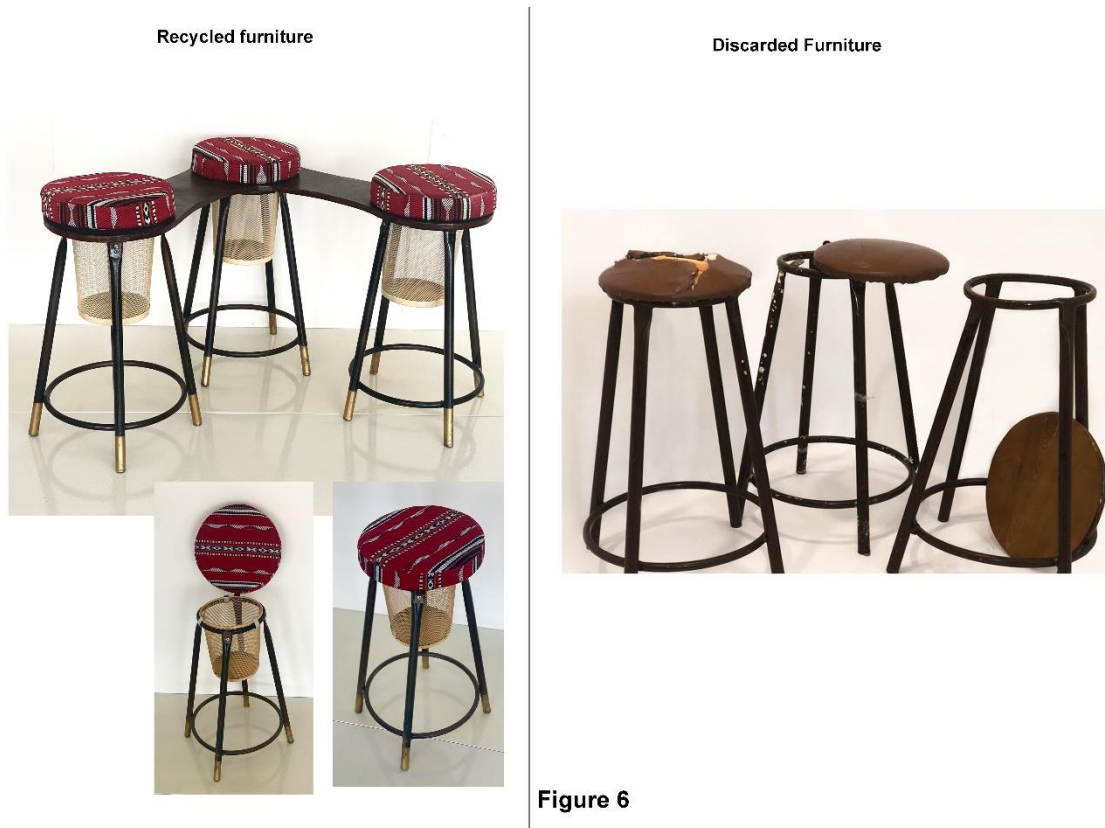
The Faculty of Arts and Design has grappled with this problem and sought solutions to it through the Workshops Works course which aims in the University of Jordan to train students in workshops such as carpentry and blacksmith workshop to product models of furniture of normal size while introducing the student to the physical characteristics of the materials forming the items and vocabulary of interior design and the methods and techniques of marshalling them in the field of specialization.

Accordingly, the students were directed to restore the derelict and old furniture in the buildings of the University of Jordan to revive the spirit of forgotten halls and spaces in which are condensed derelict pieces of furniture awaiting removal. The Workshops

Works course stressed on the idea of (reuse) using two methods, the first is to take an old piece and add to it new and suitable touches of style and contemporary forms and appearance insofar as painting or upholstering and otherwise. As regards the second method (upcycling) it is represented by a redefinition and innovation of a new element using old elements which most probably alters their form and original function, whilst exploiting all the elements- even the cutting of wasted wood in the process of producing new pieces of furniture.

A group of students toured the installations and faculties of the University in search of old and derelict furniture and tables "scrap", so as to restore and change their forms to become usable again. We overview a number of them here critically and analytically:

- **First sample:**



The work in Figure (6) consists of three stools that are interconnected through a wooden piece in the form of a triangle minus an angle, and the seats are upholstered with cloth that is of local ornamental themes, and through this formal composition under the seats are transparent baskets of aluminum, and the work consists of a set of relations at the level of design in composition and analysis in addition to another level in terms of material, where we see the recycled shape which is basically three-fold and derelict stools, and these stools were formed of two materials, namely brown iron which represents the legs and the framework of the seat or a sponge base covered by a brown leather cover.

Upon studying the new recycled work through individual shapes of seats, we find that the designer has worked on the form and content in the design, and the new vocabulary added to the old forms contributed to the creation of a composite design form, whereby we find that the elements that formed the new design piece is basically the coalescence of three individual and discarded stools, and the designer consolidated the formation through merging them in a wooden frame that assumes the form of a triangle separating between one foundation and the other to generate an area that could be used as a table abutting the foundations. The designer emphasized the aesthetic value and intellectual content of the new work through borrowing the colored cloth of the seats instead of the old leather which gives us a sense of coldness, and here the designer stressed the new function of the seat through the cloth which transports the recipient to a feeling of warmth through the shades of fabric colors of the color red and the nature of the ornamental elements which reflect the local social heritage, and this is what distinguishes the ornamental elements in Jordan in terms of the designs of clothes and otherwise, and the designer did not overlook the functional aspect also by innovating a different chromatic value that is transparent and that is distinct from the legs of the seats, to enable the user of the new shape to avail of the design form under the seat upon which he sits.

It would be necessary to allude to the merging of the material which was harmonious with the functional and aesthetic vocabulary of the form, for between the wood which frames the cloth seats and the dark legs which adopted the color of wood the color of the cloth and the value of the metal in light color in the basket which formed the design style was

distinguished, where it assumes a new proclivity in reformulating the derelict forms in the development of new forms, whereby through forming a recycling of the derelict stools (chairs) was a reformulation into versions and through elimination and addition of a new form, and through the form of synthesis three similar forms are merged as a single version through a synthetic work as in Figure (7) for another designer whereby three old stools were merged of a wood material which were elaborated through a single work that is intimate and interconnected, which calls for familiarity removed from the isolated stools. The new shape contributed to harmonizing and merging aesthetic values in the mechanism of constructing the new chair consisting of several stools (chairs) within a gradient of the level of interlacing between the three elements forming it, and the addition of a different chromatic value between the base and the legs in the old version to distinguish it in the new version between the base and the legs through various chromatic values.



Figure 7

The two previous samples concentrated on recycling a stool, and its rearticulating in a contemporary fashion to utilize it anew in the faculties and spaces of the University of Jordan, and we see this in Figure (8), where this work constitutes a dialogue between two stools which were connected by a wooden foundation which adopted a different design proclivity in elaboration, where we find that there is innovation for a different level and a new foundation that constituted a trinity of elements, consisting of two seats at the middle of which is an empty space at the foundation which the designer marshaled to break monotony and the expected in the design in addition to its functional aspect. And one who follows the sequence of forms prior to their recycling will find that the designer has altered the original measurement of the stool by eliminating the defunct and derelict part of the backrest and extracting it which impacted the design version of the overall form, and the dialogue between the forms in the backrest of the seats had an influence on constructing an aesthetic system where the designer preserved the design diversity in both seats through engineering designs that are almost different in addition to shaking the overall shape with a circular foundation through which runs a system of lines and random spaces.



Figure 8

The designer harmonized between the used materials for despite the use of two materials (wood and iron) the chromatic value of both contributed to the work unit.

We note in Figure (9) how the stool was treated through borrowing a new foundation for the shape of the seat through replacing the wooden foundation of the old seat with a cloth foundation which added a visual aesthetic value for the form by virtue of the chromatic harmony between the seat and the backrest of the chair, where the design used the wooden legs of the old wooden chair and merged it with the leather seat of the stool produced of iron to merge them together in a new formation where the iron was used to support the back of the chair and the wood in the legs, and the leather seat was replaced by a cloth seat of bright colors.



Figure 9

- Second sample:



Figure 10

The work in Figure (10) is two chairs that were recycled from two old chairs, where the material of the chairs consists of merging between wood and translucent plastic acrylic in addition to the presence of a dark color within the base of the

chair and on the sides of the angles of the chair (back, legs), where the two twins of the chair constitute a contrasting dialogue between them insofar as the copy and alteration in form, and this is what we see in the copying that is correspondent to the form with the exception of the base of the chair which was differentiated by adding the translucent material (plastic acrylic) to one of them.

Upon studying the mechanisms of recycling the two chairs, it would be necessary to revert to the origin of the two chairs, where the chair represents a design that was widespread in the eighties of the previous century, and it assumes the classic form of the chair in terms of the design and material of the chair in which the value of wood had prominence, through painting the wood with a transparent color to protect the value of form and the texture of the wood, and we also find that the base of the chair is distinguished by the merger of pieces that cohere together to form the base.

To return to the new form of the chair, we find that the designer recycled the two derelict chairs by relying on the old design of the chair, while re-modulating the design through adding a new material that was not present at the time of the design of the recycled chair, namely plastic acrylic, where this material contributed to the seat of the new chair leading to a reinterpretation of the new design, where the interpretations of the angles of the wood were revealed which connect the legs to each other in addition to the back of the chair involving a condition of interpenetrations which conferred an aesthetic form, in addition to the formulation of the color of the chair; the design maintained the neutral color of the wood of the chair and stimulated the form by adding a different color (back) to the base of the chair and the sides of arms (legs and back) which conferred aesthetic value on the design content.

The recycling of derelict old chairs, fostered new forms in the re-design of what is old generating a contemporary look through introducing new materials and merging between them, whereby the designer kept the old form and modulated it through coloring it and through the material added to the old, to form an aesthetic dialogue between the two recycled chairs, which we see in Figure (11) for another designer who focused on preserving the general design of the chair, and borrowed a new seat for the form of the chair through replacing the wooden seat of the chair with a translucent seat which added visual aesthetic value to the form through manifesting the ornamental value in the back of the chair and its base.



Figure 11

- **Third sample:**

This work in Figure (12) represents a chair that was recycled through maintaining anew the old design structure through renovating the old wood and adding a sponge base covered by cloth of ornamental units inspired by the popular gowns of the region. And returning to the form that was recycled, we find that the chair with its general structure did not sustain in its general design units any addition with the exception of the base, given that the designer adopted the principle of elimination and addition to construct a contemporary design language of local roots, through eliminating the old wooden base of the chair which functionally affects the comfort of the user, and replacing it with a comfortable base of sponge covered by cloth, and here the design places us before a sensational content as though a woman with an old gown who sits on this chair where the gown remains on the base relating the story of the local fashions as in Figure (13), where the designer borrows a chair of a character marked by design stagnancy particularly since the chair that was recycled is basically a merging between the material of brown wood and sponge base that is covered by black leather, and we see in this example a reformulation of the design of the chair in a contemporary version whilst retaining the revival of the traditional character of the chair, through the base clothed by ornamentation and colored local motifs, and the designer revived the nature color of the wood of the chair

The designer focused on the mechanisms of the elaboration of the chair through recycling it, and the elaboration of the derelict and eliminate and add a new element to the chair through significations belonging to the social tradition of the region.



Figure 12



Figure 13

The design did not modulate the formal structure of the chair except through simple shifts by reviving the chromatic value of the wood color of the chair, and replaced the leather base of the chair with the value of colored cloth which brings ornamental value that belongs to localism, and the borrowing of the ornamental character of popular fashions, in addition to design components in the back of the chair which preserve the aesthetic and functional value which buttress the back of the chair, and here we see that the designer renovated what is old and derelict into a contemporary version that is characterized by warmth through the chromatic values constituting the chair. This is exemplified in Figure (14) where the designer relies on cloth of popular rugs in the design of the base of the chair whereby this borrowed value varied through the white color, which covers the backrest and legs of the chair, which imparted an added value to the texture of the cloth in the base of the chair, and did not suffice with this but rather added a new and different material of iron as a support of the chair arms which was not a simple addition in terms of design, where the designer risked by merging a set of different materials in texture, form and color in one furniture piece, and the design of the armrest contributed through this linear simplicity to the harmony of the materials of the chair in combination.



Figure 14

- Fourth sample:



Figure 15

This work in Figure (15) represents a chair that was recycled through combining two materials namely wood and iron, where the designer attempted through this work to preserve the spirit of the old and adding a new part, where it would have been possible to renovate the chair completely to appear as though new, but the designer emphasized through this work the importance of maintaining the old condition of the chair, and adding an iron structure to the missing and eliminated part of the original chair, in order to solidify the structure of the chair and add a contemporary aesthetic value through artistic treatments of the external structure whereby the derelict chair appears as an artistic piece serving the aesthetic value, which added the feature of design intrepidity and not giving due regard to the functional side in favor of the pure artistic dimension, and this is what we see in Figure (16) for another designer where the designer eliminated the sponge base and the backrest of the wooden chair and replaced them with a set of derelict plastic tennis balls of bright colors fastened to rods of fine flexible aluminum that are derelict, where these balls added to the work an aesthetic value through the harmony of the rose and white color in the vocabulary of colors and visual effects given that the color of rose is considered a symbol of femininity, love, and emotion and produces a feeling of comfort and helps one to relax.



Figure 16

A path of white color was added vertically and horizontally from the same color of the structure of the chair to be in harmony with the general structure and to complete it, and here we find that the designer favored the aesthetic side to the functional side as in Figure (17) where the designer recycled the wooden chair of sponge base and replaced it with a new base characterized by the merging of two materials (wood and derelict Lego piece) which were installed side by side.



Figure 17

The designer emphasized painting the wood with the color black to highlight the chromatic value of the Lego pieces, and the designer resorted to evoking the concept of chromatic distance between the black color and other colors where he seeks to make the recipient focus on the Lego pieces and highlight the features and structure of the chair, and he likewise eliminated the sponge backrest covered by cloth pieces and replace it with abandoned children's toys in the form of balls of bright colors. Here we find that the designer emphasized once again the artistic aesthetic value, in addition to the concept of limiting the pollution of the environment through recycling discarded children's toys and stressing the importance of limiting environmental pollution and serving economic aspects, by harnessing all that is old and reviving it in a new contemporary form, whereby it serves functional and aesthetic aspects. This is what we see in Figure (18) which represents a derelict bench made of iron coated with the color green, where the designer recycled it by using derelict Lego toys in the back of the bench, and painting the base with black to emphasize the concept of chromatic opposition as we mentioned in the previous example. However, it must be mentioned that the designer attempted to emphasize the functional value alongside the aesthetic dimension.



Figure 18

- Fifth sample:



Figure 19

This work in Figure (19) represents a chair that was recycled through a set of elements that influenced its design trajectory at the level of the aesthetic and functional value, where the chair consists of two inhomogeneous relationships, such as iron and cloth which mesh to form a contemporary design structure, for through the Contrast formed by two materials towards chromatic contrast (green and purple) or (blue and orange), the designer enlivened his artistic work and by reverting to the

origin of the chair upon which the designer relied to recycle it, we find that the chair is basically two materials (wood + iron) where it represents a paucity of functional value of the chair by virtue of its inertness and a lack of comfort upon sitting upon it, and here we find that the designer adds a chromatic value to it through the marriage of two colors in the structure of the chair and the seat covered with cloth which extends on one of the legs of the chair for aesthetic purposes, and here we find that the designer succeeded in conferring an added value and creating new life for the derelict material, by means of elimination and addition related to contemporary aesthetic aspects.

Research results

- The student focused through this project to make the campus of the University of Jordan eco-friendly by achieving one of the criteria for sustainability through upcycling derelict furniture in which old or discarded materials are converted into something reusable has same or even better quality than the original at the lowest cost, as is evident in all samples.
- The student focused on the stool which he deals with in recycling furniture in the University of Jordan and converting it to new formulations through assemblage and dismantling, as is evident in the First sample.
- The study succeeded in reformulating the designs of old furniture through new versions, in terms of form and content, as is evident in the Fourth and fifth samples.
- Preservation of the spirit of old materials through contemporary elaborations, as is evident in the Second and third samples.
- The produced works were characterized by a functional and aesthetic form, and some assumed an aesthetic inclination at the expense of the functional aspect and the function was at times marginalized in favor of aesthetics, as is evident in the Fourth sample.
- The designer relied on the materials used in the production of the artistic chair namely (glass, wood and iron) in a manner that is harmonious with the materials of the place, and the desire merged between more than one material in favor of the aesthetic value and the utilitarian value all at once, and the two values in combination, as is evident in the Second and fourth samples.

Research Recommendations

- The researcher recommends the conduct of a comparative study comparing the old design of the derelict University furniture and the new designs which were recycled.
- The researcher recommends studying the impact of the relationship between modern and old materials on the produced piece and its impact on the recipient.
- The researcher recommends studying the impact of social heritage inspiration on produced furniture

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