

Research Article

Creativity and Innovation in Paper

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Abstract: *In the research of the review of this creative and innovation area that can benefit community and nation. The review that had been picked in this research was the paper. The aim of this review is to explain about the advantages or the benefits of paper and also the used of the paper, also the improvement of the nation by the helps of the paper production and innovation. The methods that we going to describe in this review was the involvement of the paper production in many fields, such as for individuals, schools, medical centre and so on. There are a lot of information and new knowledges that we going to present and cite in this review. The conclusion of this article review was to be making sure that everyone knows the important and the properties of the paper in our country.*

Keywords: Creativity; Innovation; Paper; Community; Product



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1. INTRODUCTION

Paper is extremely important in today's culture and in our daily lives. Paper is one of the most significant and necessary items in our lives. It will be utilised in schools, hospitals, offices, and many other places. A felted sheet of typically vegetable fibres put down on a thin screen from a water suspension specified paper. There are several types of papers that we have used throughout our lives, including newspapers, A4 test pads, written schooling, books, and novels. Paper is not just more environmentally friendly than other materials. It's also easy to reuse with less negative influence on the environment. This is due to its ability to be re-pulped without the use of chemicals. Paper has a lengthy life cycle, and recycled paper fibres may be utilised to manufacture new goods up to five or seven times. Paper has evolved into our most basic and lightest weight notation, technical drawing, and creative expression surface. Paper is the cheapest and most practical option if we need a surface to create a note, drawing, or calculation.

Everybody maintains a pad of paper at their desk or worktable so that their ideas may be written down in "hard copy." Paper is significant because we use it for a variety of tasks, including drawing and origami. Paper is also manufactured from trees, and it is our responsibility to protect them. Paper is very useful for the teacher, students, children, the eldest, the foreigner and so on. As for the student, they need the books, magazines and the A4 test pad for their schoolwork's and for the needed things in school.

As for the teachers, they use the papers for the examination sheets, books that they wrote for the students also the notes that they contribute for the students. And for the foreigner, they will use the

paper for the tickets, maps, and the location list that they going to go. We may also recycle old paper to create new products. We can innovate that paper to many reuses item or maybe an arca. We can also produce many stuff that we can used in our daily life such as the recycle paper, furniture such as chair for the cats and so on.

2. BENEFITS

Paper is an essential component of daily living. Paper is a thin sheet material made by physically or chemically processing cellulose fibres from wood, rags, grasses, or other vegetable sources in water, draining the water through small mesh to leave the fibre equally dispersed on the surface, pressing, and drying. Although paper was once prepared by hand in single sheets, it is now almost entirely produced by enormous machines, with some capable of producing reels 10 metres wide at 2,000 metres per minute and producing up to 600,000 tonnes per year. Printing, packing, decorating, writing, cleaning, filter paper, wallpaper, book endpapers, conservation paper, laminated worktops, toilet tissue, money and security paper, and a variety of industrial and construction activities all employ this versatile material.

Depending on its intended application, paper may be made with a broad range of qualities. Paper is used for hundreds of different functions, including packing, wrapping, insulating, and towelling, in addition to being the basic medium for written and printed communication. some of the advantages of paper packaging that have contributed to its continuous popularity, as well as some of its disadvantages, so you may leave with a well-rounded understanding of this type of packaging. The advantages that we get from paper are it degrades faster than other materials, it is easy to recycle, it is bio-based, it is better for the environment, and it is very reusable. First thing first, it is more biodegradable than other materials.

When compared to other types of packaging, particularly plastic, paper has a faster biodegradation rate. When exposed to bacteria, yeast, and other organisms in natural conditions, paper wrapping degrades fast. Next, it is easy to recycle. Paper is one of the world's most recyclable materials. Paper and paperboard accounted for roughly 67 percent of all recycled municipal solid waste (MSW). Then, the papers are bio-based. The majority of paper is made out of natural forestry components (i.e., fibre). This is advantageous since the substance decomposes into natural components found in our surroundings. Paper is one of the few completely sustainable items on the planet since it is made of wood. It is also better for our environment, and it is reusable. The pulp, paper, and print value chain are one of the lowest emitters of greenhouse gases in the world, accounting for about 1% of global emissions. Younger forests can also aid in carbon sequestration, which is described as "the process of trapping and storing atmospheric carbon dioxide" when maintained responsibly. This is crucial because carbon dioxide is the most common greenhouse gas. This is how you can do it by learning on how the carbon sequestration works with the trees. Younger trees trap more carbon dioxide than older forests, while storing more carbon.

The ability of trees to sequester carbon decreases as they age. This is due to their rapid expansion. According to Steve Prisley, a lead research scientist of NCASI, "Biological growth in trees is quite high at young ages, and this growth rate slows as the trees age." Because younger trees (and forests) grow quicker than older trees (and forests), they can remove more CO₂ than older forests with the same area coverage. As a result, when managed sustainably, getting fibre from forests for paper goods may be better for the environment. Paper is not only more recyclable than other materials, but it is also easier to reuse and has a lower environmental effect. This is due to the fact that it may be repulped without using chemicals. Paper has a lengthy life cycle, as well: recycled paper fibres may be utilised to manufacture new goods up to 5 to 7 times.

Printing, packing, decorating, writing, cleaning, filter paper, wallpaper, book endpapers, conservation paper, laminated worktops, toilet tissue, money and security paper, and a variety of industrial and construction activities all employ this versatile material. Paper are also can be used for publishing, written or informational items. Such as for presenting the value. As an example, the paper money, bank note, tickets, cheque, and voucher. For storing information such as book, notebook, graph paper and the photographic paper. For the published materials, publications and reading materials, we have the books, newspapers, magazines, posters, and pamphlets. For the individual used we can have the diary, notebooks, writing pad, journals and many more. In the visual arts, paper plays an important role. It may be used to create two- and three-dimensional shapes and collages on its own. It has also grown into a structural material used in furniture design. Water colour paper has a lengthy history of manufacturing and application.

3. IMPACT

Impact is a change that occurs as a result of anything being done or occurring: A cause produces an occurrence, circumstance, or state of affairs. Paper has a tremendous environmental effect, which has influenced several industrial decisions as well as personal and commercial behaviour. Because of technical improvements such as the printing press and wood harvesting, disposable paper has become widely available, resulting in high consumption and waste levels due to its cost. Environmental challenges such as water and air pollution, overflowing landfills, and global climate change have prompted several countries to tighten restrictions. These have shaped a tendency toward reducing water usage, clear-cutting, fossil fuel consumption, and greenhouse gas emissions, among other things, in order to mitigate air pollution and water supply consequences. There are many impacts on producing and overuse of paper.

3.1 Air Pollution

Firstly, the impact of producing paper is air pollution. Pulp and paper industries have a substantial environmental impact when compared to other sectors' emissions. Nitrogen oxides, sulphur oxides, and carbon dioxide are produced. Acid rain is caused by nitrogen and sulphur dioxides, while carbon dioxide, as a greenhouse gas, is to blame for climate change.

3.2. Water Pollution

Pulp and paper mills are sources of nutrients, solids and dissolved matter like lignin in wastewater discharges. There are other agents like alcohol or inorganic materials such as chlorates. These go ahead to pollute the rivers and lakes that they are released into.

3.3 Sulphur, Hydrogen Sulphide and Sulphur Dioxide

Both the kraft and sulphite processes for producing wood pulp involve sulphur-based chemicals. With the exception of ammonia-based sulphite processes, sulphur is normally collected, although some is emitted as sulphur dioxide during burning of black liquor, a by-product of the kraft process, or "red liquor" from the sulphite process. Because sulphur dioxide is water soluble and a significant source of acid rain, it is of special importance. A contemporary kraft pulp mill's electrical generation is more than self-sufficient, and it usually generates a net flow of electricity to the local grid. Additionally, bark and wood leftovers are frequently burnt to create steam in a separate power boiler. The odour typical of pulp mills using the kraft process is caused by air emissions of hydrogen sulphide, methyl mercaptan, dimethyl sulphide, dimethyl disulphide, and other volatile sulphur compounds.

3.4 Greenhouse Gas Emissions

Because fibre is derived from trees, paper manufacture requires fuel, and paper waste disposal can contribute to greenhouse gas emissions, the paper cycle has a wide variety of natural resource and environmental consequences (GHG). Because of the reliance on renewable wood by-products and the upkeep of forest plantings, the paper cycle may be viewed as a net sink for GHG in some countries. However, on a global scale, our analysis shows that the paper cycle is a considerable contributor to GHG emissions, with annual emissions at least similar to those of Australia. On a heating-equivalent basis, the projected global warming impact of paper in landfills is similar to that of paper producing activities. The transportation and energy industries account for around 69 percent of worldwide greenhouse gas emissions. The paper and print industry are responsible for 1% of all carbon dioxide emissions. When paper is disposed of in landfills, it is broken down, and methane is created, which is also a strong greenhouse gas. Furthermore, the pulp and paper sector rely on fossil fuels for raw material production and transportation, resulting in increased greenhouse gas emissions. Non-renewable resources.

3.5 Negative Waste of Paper

With much of the attention focused on plastic disposal, the impact of paper waste is often overlooked. Yet, improper paper waste disposal and recycling can impact the economy and the environment as the other waste products.

3.6 Forest Devastation

The preservation of our woods is critical. Our woodlands are vanishing at a frightening rate. While many businesses are adopting environmentally friendly paper manufacturing procedures, tissue paper manufacturers continue to clear our Northern boreal forests. Hundreds of species are dependent on these woods for survival, and their extinction would be catastrophic if the forest environment disappeared. Forests also create oxygen and contain CO₂. In the Southeast, tree plantations are being established to replace wild wood ecosystems.

3.7 Landfill Volume

According to Green Student U, paper accounts for 35 of every 100 pounds of trash disposed of in landfills. As a result, paper is our most common waste product. Waste transportation is costly. The higher the volume of garbage, the higher the transportation cost. As the size of landfills grows, more space is required for garbage containment. Wastes are frequently burnt, resulting in air pollution. Paper contains several poisons that leach into the soil from both open and covered landfills, causing environmental damage.

3.8 Litter

Over a third of all trash is made up of paper. Cleaning up costs states hundreds of thousands of dollars per year. Tourists and companies avoid areas where rubbish is an issue. Littered spaces produce germs and attract insects and rats, who then spread the disease and make people sick. Toxins in paper are released into the soil when it decomposes. Storm water carries these contaminants into rivers. Animals consume trash and grow ill or die as a result. Litter is mostly caused by pedestrians, unprotected trucks, and inadequately covered garbage containers.

4. SOLUTION TO OVERCOME PAPER WASTE PROBLEM

Recycling paper saves gasoline and energy while also reducing pollutants in the air and water. It's also a crucial strategy for preserving our forest ecosystems. However, recycling alone is insufficient. Reusing paper supermarket bags or switching to natural fibre bags reduces waste and pollution. You may assist reduce waste even more by reducing your use of throwaway paper items. Instead of paper napkins, use linen napkins. Instead of disposable plates or cups, use edible or reusable kitchenware. In your neighbourhood, start or join clean-up and education projects. Report litterers and demand that litter laws be enforced. Every person who makes an effort to reduce paper waste contributes to the preservation of trees and ecosystems that are essential for our survival. Mill broken, pre-consumer trash, and post-consumer waste are the three types of paper that may be used as feedstocks for creating recycled paper.

Mill broken is paper scrap and trimmings from the manufacturing of paper that is recycled within a paper mill. Material that was wasted before it was ready for consumer use is known as pre-consumer waste. Material dumped after consumer usage, such as old magazines, outdated telephone directories, and household mixed paper, is referred to as post-consumer garbage. One issue with recycling wood pulp paper is that the fibres decay with each recycling, and after four or five recycling's, the fibres become too short and weak to be used in paper production. Governments and organizations have put in place different measures to address the environmental impact of the paper industry. They include sustainable forest management which is not all trees can be cut and minimize cutting tree. Moreover, government can pulp bleaching using nonelemental chlorine process. People can also reusable paper and recyclable material.

For many years, environmentalists have fought for the recycling of paper trash. It does not have to be thrown away immediately after usage. People can give it fresh life with a little imagination. Everyone workplace may easily become creative when it comes to repurposing paper. People can print documents only use one side of the paper. We also can split them up into tiny pieces and use the unusable side for notes. Other than that, do not discard outdated newspapers. Furthermore, can store these to use for gift wrapping at workplace occasions and make gorgeous décor for workplace occasions by using discarded and used paper. Lastly everyone can recycle cardboard for inventory storage.

5. CONCLUSION

In conclusion, paper is one of the most useful things in daily life. People must use it properly to avoid the negative effect of it. When comparing the net energy benefit of wastepaper disposal, recycling clearly outperforms landfill and energy-from-waste, but the greatest gain comes from combining recycling with cogeneration and using extra wood for cogeneration. However, this ideal yield can only be achieved if there is a capacity to utilise the extra heat from cogeneration. Otherwise, this thermal energy is wasted and does not contribute to the energy balance. Understandably, the greatest total advantage comes from recycling as many times as possible, each time using the preserved lumber for energy, and when the waste fibre has decayed beyond use in paper, using it as an energy source. The economic and environmental benefits of appropriate trash reduction and recycling systems are enormous. However, whether at home, at an office, or in a large corporation, paper waste should not be taken for granted. It's past time for paper-dependent businesses to strive to sort trash effectively, or risk incurring the costs of inefficient paper handling and use. Using fibre as an energy source has become too deteriorated for use in paper.

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