



NOVEMBER/DECEMBER ISSUE #8

## COVER ARTICLE

## PHOTOGRAPHIC ESSAY

## 7 PRINCIPLES OF EAGLE

ARE YOU LEFT OR RIGHT BRAIN THINKER?

MENTOR GUEST

WHAT IS ELECTRICAL ENGINEERING?

AFRICAN HERITAGE EXPO

MECHANICAL ENGINEERING

Design of Automated Plastic  
Recycler and Preform Injection  
Molder

COMPUTER ENGINEERING

Low Cost  
Low Power  
Computer Labs

DISCOVER YOUR PART IN THE BIGGER PLAN

With  
**each DROP**  
*of your*  
**Knowledge,**  
**we**  
**will create the**  
**ocean.**



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Merry Christmas

## EDITOR'S LETTER

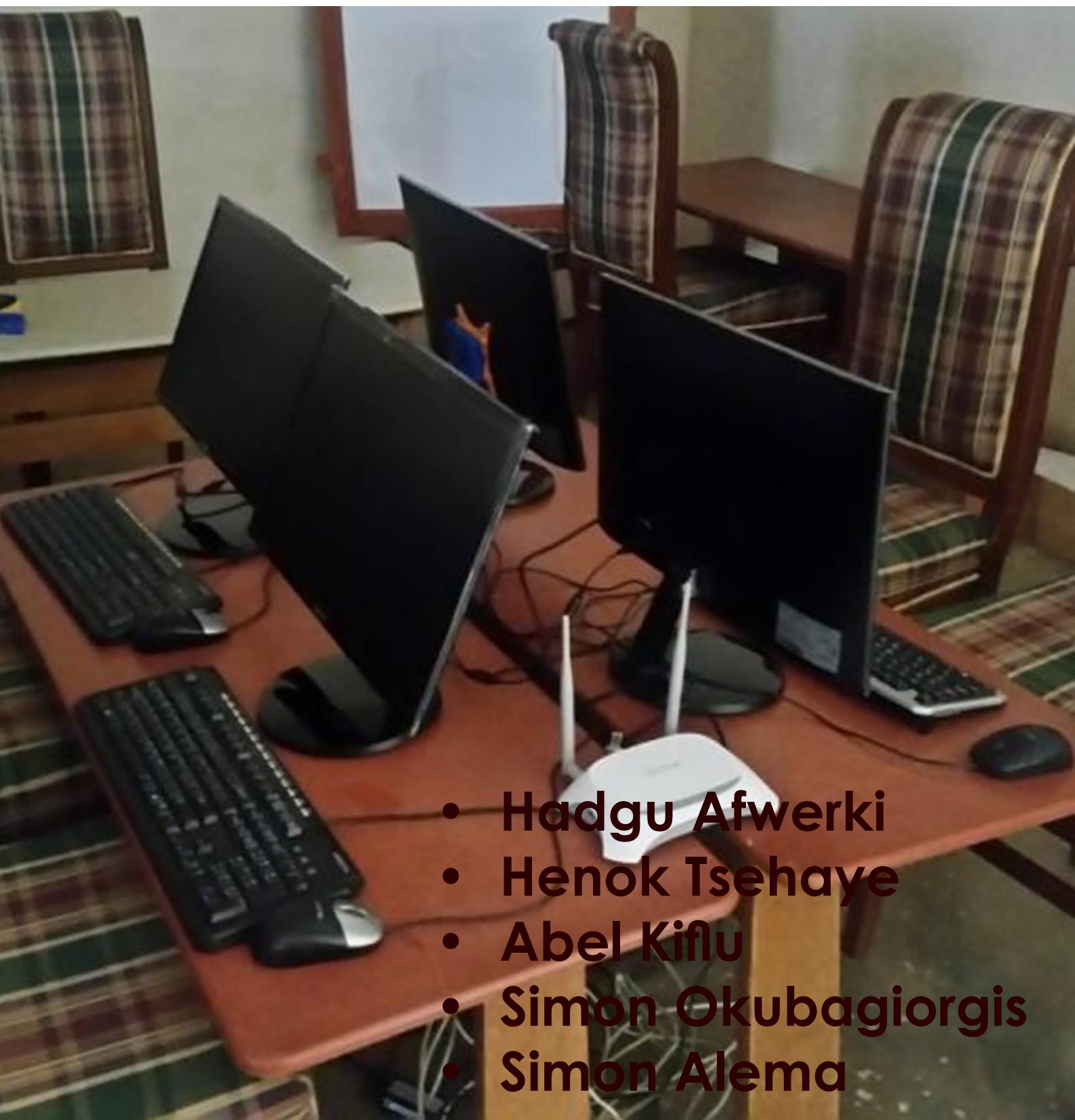
Dear readers, we would like to say Merry Christmass and Happy New Year on the first place. In this November AND December issue we have presented projects as usual along with exciting and useful articles. Eng. Sham Mesfin is this month's Mentor Guest. Articles about right and left brain, reversing cavities and decayed teeth with coconut oil, Africal Heritage Expo and the benefits of pursuing your passion are presented. And our theme of the month is about "DISCOVERING YOUR PART IN THE BIGGER PLAN" .

Readers can read and download this month's edition and all the previous ones for free at Facebook/Eritrean Scientific Society and eriyouth. org.

Editor-in-Chief

*Saba Tekeste*

# **LOW COST LOW POWER COMPUTER LABS**



- Hadgu Afwerki
- Henok Tsehaye
- Abel Kiflu
- Simon Okubagiorgis
- Simon Alema

The fully functional low cost low power lab installed at Eritrean Institute of technology (EIT) Mai-Nefhi. This is the first of its kind lab made by the Edutech Lab in mai-nefhi college. This lab provides full educational facilities ranging from simple computing with word processors to a fully simulated chemistry, astronomy , music, physics and much more. It is designed to cope up with the needs



of modern world of computing. At this age the roll of information technology in every aspect of our lives is a necessary matter. A generation of digital breed is emerging that seems that cannot survive without digital interference for a day. So a person without the knowledge for usage of information technology seem to be in question for survival. Here in Eritrea the ministry of education has understood this and introduced a clear and comprehensive curriculum ages ago. but the fact remain the general population is no exposed to the usage of computers on a daily

basis. A research conducted shows this is mostly because of the cost of computers is unaffordable to the low income families. and the living in areas where national power grid doesn't reach or in areas of unstable power sources. To remedy this problem her a low cost low power computer lab is proposed This proposed system depicts a method of using a low power and low cost computer lab. More precisely this system provides a system provides a customized computer lab with custom make



computer and a highly modified version of Linux that is designed with special consideration of the third world (mainly Eritrean) education requirement. Thought this is the specific aim this system can be used by various sectors with little or no modification. Generally this system is a custom built computer that requires 80% lower power and cost than the current system. And a collection of web and system applications that facilitate educational curriculum. The computer are made from the raspberry pi 3 board and the waveshare portable screen. This computers are loaded with a version of Linux that is translated to local languages for ease of use and increasing the usability of this system. About 60% of the current system is translated to Tigrinya.

This include system applications, various software packages and education games. Most of the packages are modified to include local language support. One special example is the scratch programming language which is specially modified to work with Tigrinya making it the first Tigrinya programming language. Since this is a programming language

model, which is extremely low power and low cost. This model is for use in homes and school in remote locations.

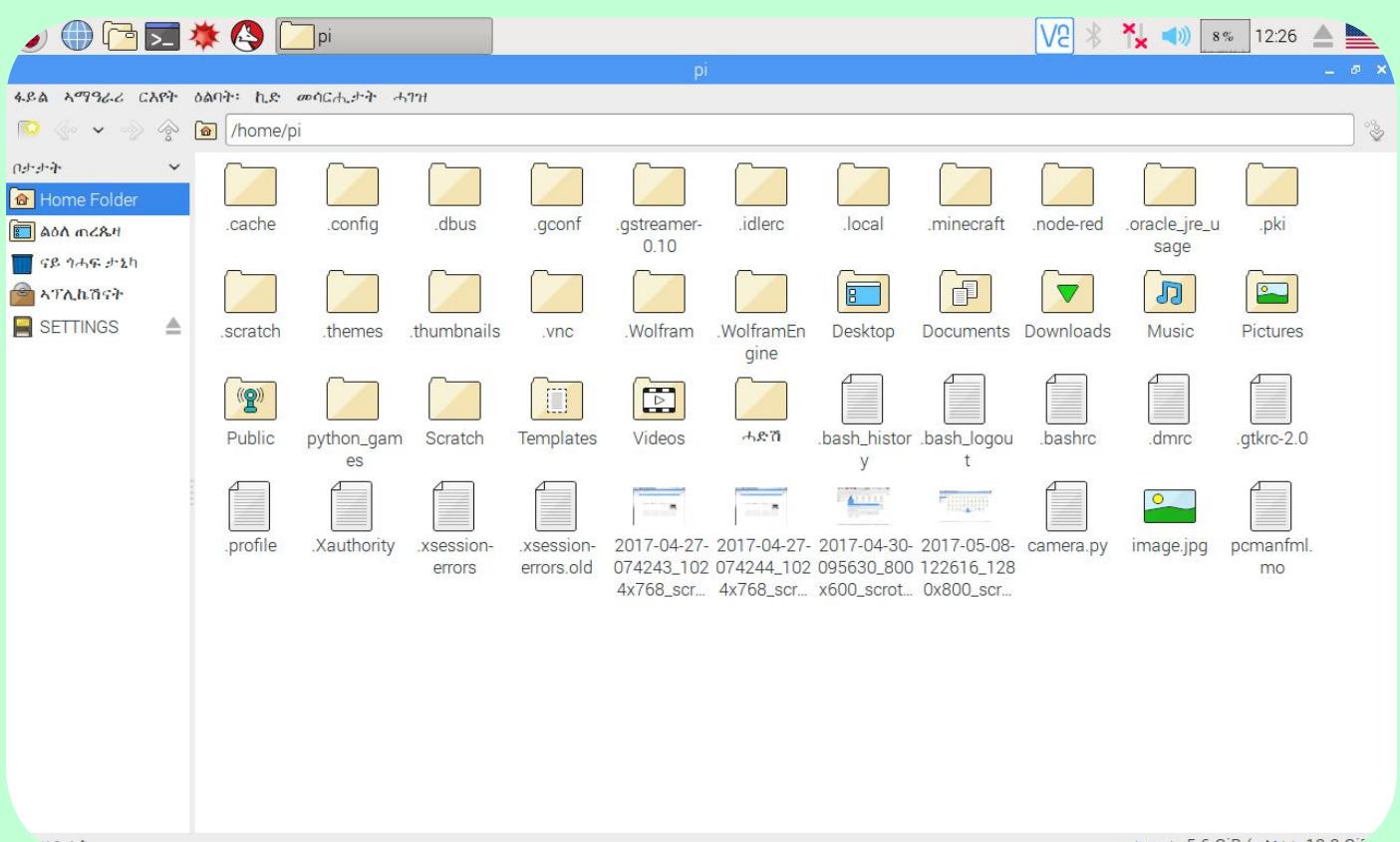
As main objective of this project was to enable access to people with limited computer access. This includes basic computer application and also usage of Internet. Since Internet is not within ease of reach. A variety



aimed for usage by school children, it could make a practical difference. This lab are designed with consideration to current equipment available in the Eritrean education system thus can be used with only replacing the faulty system units, which are the main problems according to our research in various schools. What is more is that this systems can operate at location with no conventional power supply using solar lantern available in many household at current time. This computers are designed with low cost equipments that are fault tolerant. There are current two models available one with no screen as a replacement for the system units in established lab with problems in hardware equipment. The other one is the portable

of web application are put together to simulate the basic Internet experience. This web applications include a digital library, Discussion forum, online testing and a search engine to unify them all. This web application are made to look like popular websites. All of this application are available in four Eritrean language which include Tigrinya, Tigre, Bilen, Arab and English. Since this serving web application is an intensive task a server with special configuration is available. The aim of this project was to enhance the capability of the Eritrean educational system widely available, cheap but yet modern educational computer labs. Furthermore, provide a low cost and low power computers to the general public.

**A complete PC with Linux operating system that supports Tigrinya language. a very low power consumption rate and very low price.**



This screenshot shows the central search engine and web application portal in Tigrinya. On the left, there are links for 'Digital Library', 'Discussion Forum', 'SETETA LABS' (with a search bar), 'Online Test', and 'Wikipedia'. On the right, there is a large educational game interface for 'GCompris' featuring various learning activities like a ball, a pyramid, and a dice.

**Screenshot of the system file-manager in Tigrinya (Top) Central Search Engine and web application portal (lower left) and GCompris large educational game in Tigrinya (lower right).**



# Design of Automated Plastic Recycler And Preform Injection Molder



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## INTRODUCTION

Molding is the process of making machine parts or intricate shapes using dies of the desired shape and size. Most drinking water and other beverage plastic bottles are usually molded in two steps. First a Preform of suitable size is manufactured using injection molding machine and finally the Preform is molded into the desired shape and size using blow molding machine.

In our case the Preform comprises threaded portion for a cap and thick plastic deposit. The Preform's unthreaded portion is preheated to be malleable so that it takes the final shape of the mold for bottling purpose using a blow molding machine. This senior project involves designing an automated plastic recycler and preform injection molding machine that will be highly required by the drinking water bottlers here in Eritrea.

## OBJECTIVES OF THE PROJECT

Nowadays, Pure Water Bottling Industries are growing in different zones in Eritrea to satisfy the needs of customers, thus it is evident that the exponentially growing supply of drinking water requires bottling means which is economical and reliable. The project primarily focuses on GMA water bottling PLC which is one of the promising bottling industries located in Asmara, Geza Banda. The company uses imported preforms and the defective plastics are becoming solid waste that has valuable money in it. The reason to design such a bulky machine is to keep extra money for foreign currency in importing the preforms to be used for different sizes of bottles. Moreover, it is expected to

bring back the defective plastics that have been of great loss within the company itself to get recycled for further use. The "Design of Automated Plastic Recycler and Preform Injection Molder" is at this stage a least contribution to the plastic industries in general and PET Bottle making, industries in Eritrea in particular. Thus the fear of solid waste due to PET water bottles can only be solved by introducing new technologies that would resolve the environmental pollution in the long run. Of course, the principal concern of the project is to recycle the defective bottles within the plant itself for hygienic reasons.

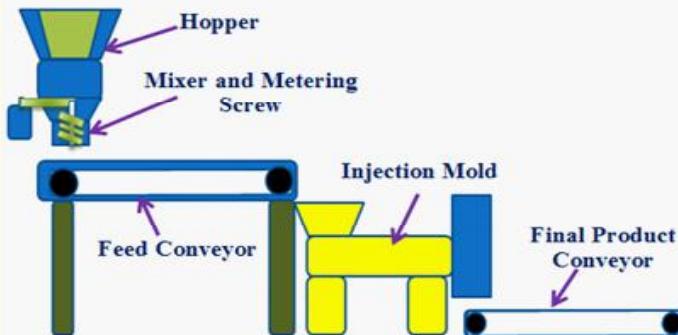
## GENERAL FEATURE OF THE DESIGN

The polymer used to make drinking water bottles is known as Polyethylene terephthalate (PET). When a recycle material is to be used, the mixture of the material for making a new preform includes 10% recycle to 90% raw for a reason that the recycled PET loses some physical properties.

## WORKING PRINCIPLE

The recycle PET is made into flakes using recycling cutter. After the flakes are properly mixed with the raw PET in the mixer and metering section, the mixture is conveyed and fed into the hopper mounted in the barrel with the help of a feed conveyor. As the screw in the barrel rotates it shears and pushes forward compressing and adding heat to the PET. There are heating bands provided to add heat so that the PET is melted at a specified temperature range.

. Once there exists sufficient melted plastic in the barrel ahead of the non-return valve, the screw stops rotating and a reciprocating force pushes it to squeeze the plastic into the mold cavity previously provided. When the cavity is filled with the molten plastic, cooling is required to solidify the preform taking the shape of



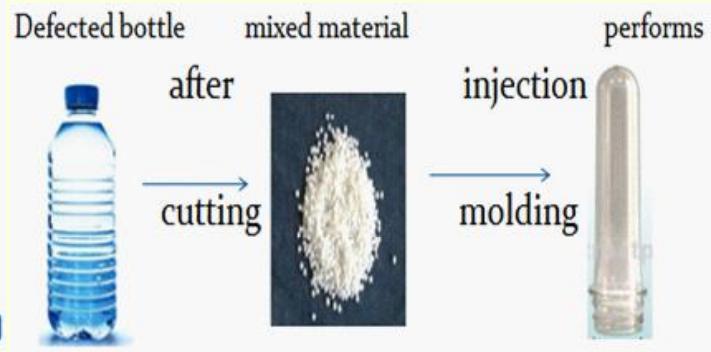
the cavity before the mold is opened to eject it. The cycle is then repeated by closing the mold with the help of clamping mechanism.

## DESIGN CONCEPT

Machine design is one of the specialization areas of Mechanical Engineering that requires thorough study of the system or mechanism to be designed for accomplishing the desired task. Generally, some of the most crucial skills Mechanical Engineers must have acquired in designing machines include: studies in strength of materials, selection of engineering materials, statics and dynamics of mechanics, theory of machines and mechanisms accompanied with drawing soft wares such as Solid-works or AutoCAD to represent the designed machine.

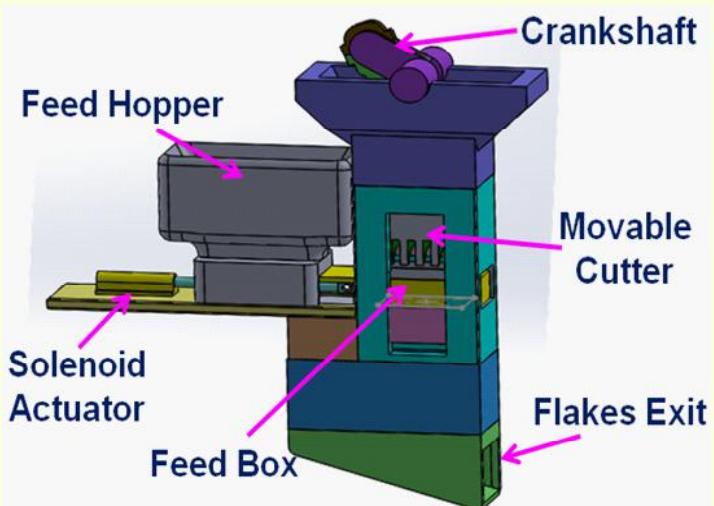
The design of system components required in 'The design of automated plastic recycler and preform injection molder' includes the design of recycling cutter, design of mixer and conveyor, design of screw and

barrel, design of mold and ejection mechanism, design of clamping mechanism, selection of appropriate electrical machines and setting up of the control mechanism in the appropriate locations for proper control of sequentially operating mechanism in the design.



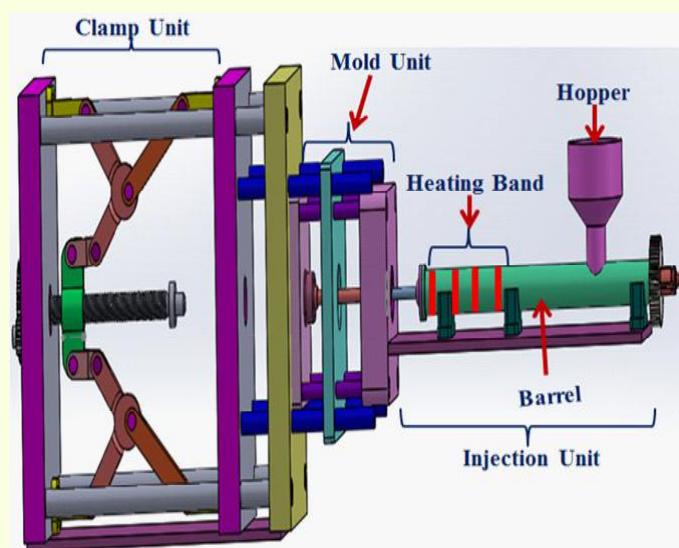
## 1. DESIGN OF RECYCLING CUTTER

Design of the recycling cutter or chipper is one of the main designs in the project. It requires special mechanism that can cut the PET to be recycled for the purpose of reducing size. The force application mechanism is chosen to be flywheel assisted reciprocating shearing die with a fixed die. Shearing is the principle of applying cutting force parallel to the resisting area. The reduction in size requires two step cutting. First the bottle is sliced and in the second step the slices are fed for final size reduction.



## 2. DESIGN OF PREFORM INJECTION MOLDER

The preform molder can be used to mold the desired size preform by interchanging the molds. In this project only one size mold is designed. There are different crucial component designs that build up the preform injection molding machine that will be discussed here. This machine is standalone machine which can mold preform from raw PET even without the recycling cutter feeding it with recycle flakes.



### 2.1. DESIGN OF SCREW

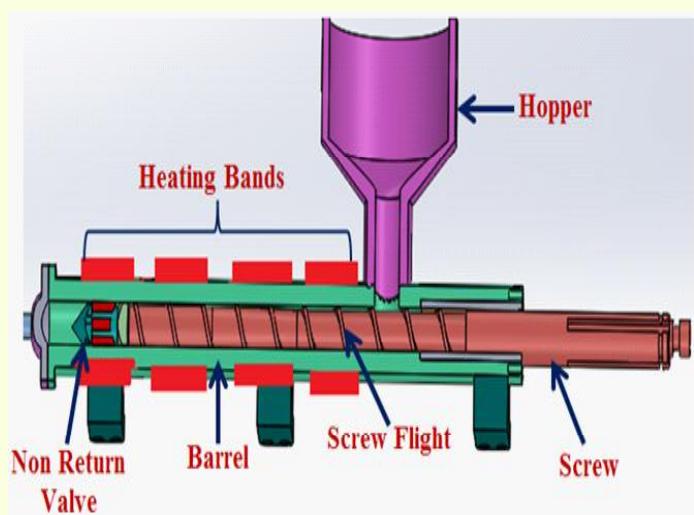
The screw used in this PET plastic injection machine here designed is of rotating and reciprocating type. The screw rotates to transfer the required amount of PET recycled chips in the form of flakes and raw pellets of PET to the recommended ratio of mixture, usually 10% recycle to 90% raw for the recycled PET loses some physical properties. Moreover, the screw used in this injection molding is a 3-stage type screw of the single flight. The screw design consists of the basic design based on the premises of smooth conveyance of pellet, plasticization for melting, deairation and compression, and measurement with

a little unevenness.

The screw type injection molding system has a screw with sufficient flights cut on it that rotates at a specified speed during metering and melting, and reciprocates during injection.

The screw is then considered the crucial element in the injection machine that does dual tasks. As the speed of rotation is raised the shearing effect of the screw to the plastic material is also raised imparting in the plasticizing and melting of the material.

The advantage of screw design over plunger type injection molding is the uniformity of heat distribution. In the plunger type the heating bands will be responsible to keep the material molten but it leaves the core section of the material to be cooler than that of the other section. This was the greatest problem that needed proper resolution. In the screw type injection molding design there are double fold advantages. Firstly, the core section that was left cooler in the plunger injection is replaced by the screw making the thickness to be heated being thinner. Secondly, the design enables mixing of the material and heat is generated not only from the heating bands but also dominantly due to the shearing action of the screw.



## 2.2. DESIGN OF BARREL

Barrel is the housing with a properly designed thickness to withstand the pressure developed due to the rotating or reciprocating screw as the PET is melted and injected into the mold cavity. A tight tolerance between the screw and barrel of an injection molding machine or extruder is of vital importance to the production efficiency and the quality of the parts produced. An increase in the gap between the barrel and screws can cause excessive scrap and increase downtime. Additionally, changes (degradation) in the screw roots and flight sides dimension may cause similar problems. Heating bands are installed around the barrel to ensure melting of the PET inside the barrel with the aid of electric heating element.

## 2.3. DESIGN OF MOLD UNIT

Mold unit is designed to provide a permanent cavity where the injected PET fills the space and upon cooling takes the shape of the cavity. There are three main stages in the injection molding cycle; stage 1, injection, followed by stage 2, holding pressure and plasticizing, and finally, stage 3, ejection of the injection molded part. When stage 3 is completed, the mold closes again and the cycle starts over again. Mechanism that provides a cavity for the plastic injection, cooling system that aids and facilitates in solidification of the injected plastic, and the ejection system are designed to suit the proper operation of the mold unit.

## 2.4. DESIGN OF CLAMPING UNIT

Proper clamping force usage is one of the most important parameters in getting a good finish of the mold item. Special care should be given in designing and selecting the mechanism of clamping. There are different types of clamping mechanisms and input power systems. Toggle and hydraulic clamping techniques are the most common. In this design we have selected the toggle mechanism that is operated by electric motor. The mechanism that changes the rotary input into reciprocating linear motion is selected to be power screw.

A controllable DC motor is chosen in this design so that the whole system of the injection molding components would be controlled in a closed loop controlling circuit using appropriate sensors or transducers and actuators.

## 3. ACCESSORIES

These are design components that are used to enhance the efficiency and controllability of the machine. These include design of mixer and conveyor, and control and electrical

## 3.1. DESIGN OF MIXER AND CONVEYOR

Raw PET pellets and the recycle material need to be mixed in one section and then conveyed to the hopper. A screw is designed for mixing and metering of the mixed PET. Two conveyors are designed in the system. One is used to feed the barrel hopper at the specified rate and the other to collect the final product for packing.

### **3.2. CONTROL AND ELECTRIC MACHINES**

In injection molding the need of control and prime moving machines is essential. The requirements of precision and high productivity in plastic production forced the modern machines to compete the time cycle and quality standards. More importantly the involvement of new technology control system and using controllable electric machines have helped efficiently. There are parameters or variables such as temperature, position, speed and time that require monitoring and keeping them to the set point during operating cycle time of the machine.

## **4. CONCLUSION AND FUTURE WORK**

### **4.1. CONCLUSION**

Health and environmental friendly materials are the most desirable materials but due to scarcity of such materials, plastics have increasingly been used in substituting these materials. The main advantage of plastics is ease of fabrication into intricate shapes of desire. One of these polymers is Polyethylene terephthalate (PET) which is most common in food and beverage packing and bottling applications. If solid waste management is improper, they influence health and the environment severely. The economic advantages of using plastics couldn't be underestimated in the nation with proper handling of the plastic wastes. The plastics are then recycled using machines designed that suit the different types of plastics.

This design of Automated Plastic Re-

cycler and Preform Injection Molder is one of the appropriate solutions for the problems caused due to solid PET wastes. The design comprises recycling cutter, mixer and metering, conveyor, screw and barrel, mold, and clamping unit.

In conclusion, this design will pave a way to the real engineering solutions related to plastic wastes in general and PET in particular. Moreover, with the availability of hard steel materials practical studies can be carried out on this paper. Most of the designed components are expected to be fabricated locally.

The implementation of the design requires further practical experimentation and analysis assisted with Flow simulating and other soft wares that might help in prior visualization of the system. The simulating soft wares are intended to reduce material cost.

We believe that the design will have positive influence not only in cost minimization but also in the overall improvement of proper solid waste management culture of the society in their daily life.

### **4.2. FUTURE WORK**

- With the implementation of this project we will be able to recycle the PET materials within the company itself only for hygienic reasons but this limitation can be overcome in the future by devising mechanism that will enable PET bottles to be back to PET bottles.
- In this design the overall limitation is the machining and experimentation of the designed components. Some of the specific system design future enhancements are given briefly.

## 4.2.1.Recycling Cutter

In the cutter section the machining of the crankshaft and the cutter set (the upper cutter and lower die) need special machining tools. In this design only 20mm by 20mm size of flakes are possible. In the future the cutter thickness needs to be reduced to optimum so that the possibility of further reduction in size will save energy in melting the PET material. Moreover, there will be improved mixing of the flakes and the raw PET.

## 4.2.2.Mixer and Metering

In the mixer and metering section the use of manual feeding greatly reduces its efficiency. It can be enhanced in the future by introducing automated feeding and specialized blending or mixing techniques.

## 4.2.3.Screw and Barrel

The backbone of the injection molding machine is the screw and barrel. Design of such vital assembly requires further studies and continuous experimentation. Machining screw is the most complex part of the whole design. We have tried to provide a model for the screw and realized that with ordinary machining it would require special skill of the operator. Flow study of the PET inside the barrel is highly recommended that we were limited in getting such flow simulation soft wares but assuming the future holds all technological solutions we will deal with utilizing such tools.

## 4.2.4.Clamp Unit

Clamping unit is designed to be actuated using power screw that its links need to be properly sized and joined. In the future the design of locking mechanism will lower the load imparted by the clamp unit designed in this project.

## SOFTWARES USED

- Solidworks
- Matlab

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# 7

# Principles Of An Eagle

From <https://sharelife.wordpress.com/2007/08/22/7-principles-of-an-eagle-dr-myles-monroe/>

## Principle 1

Eagles fly alone at high altitude and not with sparrows or other small birds. No other bird can get to the height of the eagle. Stay away from sparrows and ravens.

Eagles fly with Eagles.

## Principle 2

Eagles have strong vision. They have the ability to focus on something up to five kilometers away. When an eagle sights his prey, he narrows his focus on it and set out to get it. No matter the obstacles, the eagle will not move his focus from the prey until he grabs it.

Have a vision and remain focused no matter what the obstacle and you will succeed.

## Principle 3

Eagles do not eat dead things. They feed only on fresh prey. Vultures eat dead animals, but eagles will not.

Be careful with what you feed your eyes and ears with, especially in movies and on TV. Steer clear of outdated and old information. Always do your research well.

## Principle 4

Eagles love the storm. When clouds gather, the eagles get excited. The

eagle uses the storm's wind to lift himself higher. Once it finds the wind of the storm, the eagle uses the raging storm to lift himself above the clouds. This gives the eagle an opportunity to glide and rest its wings. In the meantime, all the other birds hide in the leaves and branches of the trees.

We can use the storms of life to rise to greater heights. Achievers relish challenges and use them profitably.

## Principle 5

The Eagle tests before it trusts. When a female eagle meets a male and they want to mate, she flies down to earth with the male pursuing her and she picks a twig. She flies back into the air with the male pursuing her. Once she has reached a height high enough for her, she lets the twig fall to the ground and watches it as it falls. The male chases after the twig. The faster it falls, the faster he chases it. He has to catch it before it falls to the ground. He then brings it back to the female eagle. The female eagle grabs the twig and flies to a higher altitude and then drops the twig for the male to chase. This goes on for hours, with the height increasing until the female eagle is assured that the male eagle has mastered the art of catching the twig which shows commitment. Then and only then, will she allow him to mate with her.

Whether in private life or in business, one should test commitment of people intended for partnership.

### **Principle 6**

When ready to lay eggs, the female and male eagle identify a place very high on a cliff where no predators can reach. The male flies to earth and picks thorns and lays them on the crevice of the cliff, then flies to earth again to collect twigs which he lays in the intended nest. He flies back to earth and picks thorns laying them on top of the twigs. He flies back to earth and picks soft grass to cover the thorns. When this first layering is complete the male eagle runs back to earth and picks more thorns, lays them on the nest; runs back to get grass it on top of the thorns, then plucks his feathers to complete the nest. The thorns on the outside of the nest protect it from possible intruders. Both male and female eagles participate in raising the eagle family. She lays the eggs and protects them; he builds the nest and hunts. During the time of training the young ones to fly, the mother eagle throws the eaglets out of the nest. Because they are scared, they jump into the nest again.

Next, she throws them out and then takes off the soft layers of the nest, leaving the thorns bare. When the scared eaglets again jump into the nest, they are pricked by thorns. Shrieking and bleeding they jump out again this time wondering why the mother and father who love them so much are torturing them. Next, mother eagle pushes them off the cliff into the air. As they shriek in fear,

father eagle flies out and catches them up on his back before they fall and brings them back to the cliff. This goes on for sometime until they start flapping their wings. They get excited at this newfound knowledge that they can fly.

The preparation of the nest teaches us to prepare for changes; The preparation for the family teaches us that active participation of both partners leads to success; The being pricked by the thorns tells us that sometimes being too comfortable where we are may result into our not experiencing life, not progressing and not learning at all. The thorns of life come to teach us that we need to grow, get out of the nest and live on. We may not know it but the seemingly comfortable and safe haven may have thorns.

The people who love us do not let us languish in sloth but push us hard to grow and prosper. Even in their seemingly bad actions they have good intentions for us.

### **Principle 7**

When an Eagle grows old, his feathers become weak and cannot take him as fast as he should. When he feels weak and about to die, he retires to a place far away in the rocks. While there, he plucks out every feather on his body until he is completely bare. He stays in this hiding place until he has grown new feathers, then he can come out.

We occasionally need to shed off old habits and items that burden us without adding to our lives.

# What is Electrical and Electronics Engineering?

By Eng. Abel Mehari

Electrical engineering is a field of engineering that generally deals with the study and application of electricity, electronics and electromagnetism. The field first became an identifiable occupation in the late nineteenth century after commercialization of the electric telegraph and electrical power supply. It now covers a range of subtopics including power, electronics, control systems, signal processing and telecommunications.

Electrical engineering may include electronic engineering. Where a distinction is made, usually outside of the United States, electrical engineering is considered to deal with the problems associated with large-scale electrical systems such as power transmission and motor control, whereas electronic engineering deals with the study of small-scale electronic systems including computers and integrated circuits. Alternatively, electrical engineers are usually concerned with using electricity to transmit energy, while electronic engineers are concerned with using electricity to transmit information. More recently, the distinction has become blurred by the growth of power electronics.



## History

Electricity has been a subject of scientific interest since at least the early 17th century. The first electrical engineer was probably William Gilbert who designed the versorium: a device that detected the presence of statically charged objects. He was also the first to draw a clear distinction between magnetism and static electricity and is credited with establishing the term electricity. In 1775 Alessandro Volta's scientific experiments devised the electrophorus, a device that produced a static electric charge, and by 1800 Volta developed the voltaic pile, a forerunner of the electric battery. However, it was not until the 19th century that research into the subject started to intensify. Notable developments in this century include the work of Georg Ohm, who in 1827 quantified the relationship between the electric current and potential difference in a conductor, Michael Faraday, the discoverer of electromagnetic induction in 1831, and James Clerk Maxwell, who in 1873 published a unified theory of electricity and magnetism in his treatise Electricity and Magnetism.

During these years, the study of electricity was largely considered to be a subfield of physics. It was not until the late 19th century that universities started to offer degrees in electrical engineering. The Darmstadt University of Technology founded the first chair and the first faculty of electrical engineering worldwide in 1882. In the same year, under Professor Charles Cross, the Massachusetts Institute of Technology began offering the first option of Electrical Engineering within a physics department. In 1883 Darmstadt University of Technology and Cornell University introduced the world's first courses of study in electrical engineering, and in 1885 the University College London founded the first chair of electrical engineering in the United Kingdom. The University of Missouri subsequently established the first department of electrical engineering in the United States in 1886. During this period, the work concerning electrical engineering increased dramatically. In 1882, Edison switched on the world's first large-scale electrical supply network that provided 110 volts direct current to fifty-nine customers in lower Manhattan. In 1884 Sir Charles Parsons invented the steam turbine which today generates about 80 percent of the electric power in the world using a variety of heat sources. In 1887, Nikola Tesla filed a number of patents related to a competing form of power distribution known as alternating current. In the following years a bitter rivalry between Tesla and Edison, known as the "War of Currents", took place over the preferred method of distribution. AC eventually replaced DC for generation and power distribution, enormously extending the range and

improving the safety and efficiency of power distribution.

The efforts of the two did much to further electrical engineering—Tesla's work on induction motors and poly-phase systems influenced the field for years to come, while Edison's work on telegraphy and his development of the stock ticker proved lucrative for his company, which ultimately became General Electric.

## **Sub-disciplines**

Electrical engineering has many sub-disciplines, the most popular of which are listed below. Although there are electrical engineers who focus exclusively on one of these sub-disciplines, many deal with a combination of them. Sometimes certain fields, such as electronic engineering and computer engineering, are considered separate disciplines in their own right.

## **Power engineering**

Power engineering deals with the generation, transmission and distribution of electricity as well as the design of a range of related devices. These include transformers, electric generators, electric motors, high voltage engineering and power electronics. In many regions of the world, governments maintain an electrical network called a power grid that connects a variety of generators together with users of their energy. Users purchase electrical energy from the grid, avoiding the costly exercise of having to generate their own. Power engineers may work on the design and maintenance of the power grid as well as the power systems that connect to it. Such systems are called on-grid power systems and may

supply the grid with additional power, draw power from the grid or do both. Power engineers may also work on systems that do not connect to the grid, called off-grid power systems, which in some cases are preferable to on-grid systems. The future includes Satellite controlled power systems, with feedback in real time to prevent power surges and prevent blackouts.

## Control engineering

Control systems play a critical role in space flight. Control engineering focuses on the modeling of a diverse range of dynamic systems and the design of controllers that will cause these systems to behave in the desired manner. To implement such controllers electrical engineers may use electrical circuits, digital signal processors, microcontrollers and PLCs (Programmable Logic Controllers). Control engineering has a wide range of applications from the flight and propulsion systems of commercial airliners to the cruise control present in many modern automobiles. It also plays an important role in industrial automation.

Control engineers often utilize feedback when designing control systems. For example, in an automobile with cruise control the vehicle's speed is continuously monitored and fed back to the system which adjusts the motor's power output accordingly. Where there is regular feedback, control theory can be used to determine how the system responds to such feedback.

## Electronic engineering

Electronic engineering involves the design and testing of electronic cir-

cuits that use the properties of components such as resistors, capacitors, inductors, diodes and transistors to achieve a particular functionality. The tuned circuit, which allows the user of a radio to filter out all but a single station, is just one example of such a circuit. Another example (of a pneumatic signal conditioner) is shown in the adjacent photograph. Prior to the second world war, the subject was commonly known as radio engineering and basically was restricted to aspects of communications and radar, commercial radio and early television. Later, in post war years, as consumer devices began to be developed, the field grew to include modern television, audio systems, computers and microprocessors. In the mid to late 1950s, the term radio engineering gradually gave way to the name electronic engineering.

Before the invention of the integrated circuit in 1959, electronic circuits were constructed from discrete components that could be manipulated by humans. These discrete circuits consumed much space and power and were limited in speed, although they are still common in some applications. By contrast, integrated circuits packed a large number—often millions—of tiny electrical components, mainly transistors, into a small chip around the size of a coin. This allowed for the powerful computers and other electronic devices we see today.

## Microelectronics

Microelectronics engineering deals with the design and microfabrication of very small electronic circuit comp-

-onents for use in an integrated circuit or sometimes for use on their own as a general electronic component. The most common microelectronic components are semiconductor transistors, although all main electronic components (resistors, capacitors, inductors) can be created at a microscopic level. Nanoelectronics is the further scaling of devices down to nanometer levels. Microelectronic components are created by chemically fabricating wafers of semiconductors such as silicon (at higher frequencies, compound semiconductors like gallium arsenide and indium phosphide) to obtain the desired transport of electronic charge and control of current. The field of microelectronics involves a significant amount of chemistry and material science and requires the electronic engineer working in the field to have a very good working knowledge of the effects of quantum mechanics.

## **Instrumentation engineering**

Instrumentation engineering deals with the design of devices to measure physical quantities such as pressure, flow and temperature. The design of such instrumentation requires a good understanding of physics that often extends beyond electromagnetic theory. For example, radar guns use the Doppler effect to measure the speed of oncoming vehicles. Similarly, thermocouples use the Peltier-Seebeck effect to measure the temperature difference between two points. Often instrumentation is not used by itself, but instead as the sensors of larger electrical systems. For this reason, instrumentation engineering is often viewed as the counter-

part of control engineering.

## **Telecommunications engineering**

Telecommunications engineering focuses on the transmission of information across a channel such as a coax cable, optical fiber or free space. Transmissions across free space require information to be encoded in a carrier wave in order to shift the information to a carrier frequency suitable for transmission, this is known as modulation. Popular analog modulation techniques include amplitude modulation and frequency modulation. The choice of modulation affects the cost and performance of a system and these two factors must be balanced carefully by the engineer. Once the transmission characteristics of a system are determined, telecommunication engineers design the transmitters and receivers needed for such systems. These two are sometimes combined to form a two-way communication device known as a transceiver. A key consideration in the design of transmitters is their power consumption as this is closely related to their signal strength. If the signal strength of a transmitter is insufficient the signal's information will be corrupted by noise.

**Professional bodies of note for electrical engineers include the Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Engineering and Technology (IET). Electrical engineers typically possess an academic degree with a major in electrical engineering. The length of study for such a degree is usually four or five years.**

# Mentor Guest

Eng. Sham Mesfin

Mentor Magazine advocates professionalism in every field. So our Guest for this issue is Eng. Sham Mesfin. Eng. Sham was born in 1992 in Asmara. He attended in different schools and finally graduated in Computer Engineering from EIT in the year 2016. He is currently working at the resource coordinating center). Mentor magazine invited Eng. Sham to share his experience with our audience who want to be professionals in their field.



Okay Eng. Sham, what activities you were attracted to in childhood regarding your current profession or other?

In elementary and junior I was mainly focusing on three things. Technology related to my current profession, sports like football and cycling, art (painting) as a hobby. From high school focused more on the technological related products especially computer graphics, maintenance, application and finally programming.

**What were your inclinations and qualities in your childhood?**

Mostly I was progressing and focusing at English and science as a result I was scoring excellent on those two. But in math it wasn't like I wanted.

**Why did you choose your current profession, is it because you have the qualities or passion only?**

At first it was purely passion. Not by thinking or calculating the pros and cons. I can't explain it more than this... kkkk. The skills and qualities developed slowly then. If there is passion it is easy to develop the skills. The first thing you need is the passion.

**At what age did you discover your passion? Was it one moment spark or process?**

When I was in junior I was trying a lot of things like I mentioned early. It was from my parent's encouragement and my own initiative. I was taking art(painting) classes, had attended sport activities, learned computer application, computer maintenance, graphics, electronics, satellite installation. All of those were in my summer time. Slowly I started to have enough insight of my passion indirectly. Finally I learned the computer programming while I was in high-school freshman(ninth grade). After that I discovered that was my passion and want to follow that profession. The process was a matter of searching and took time but it's worth it. It didn't come up at once. I tried a lot of things. It was around 2007 I finally made a decision to follow my passion as I discovered it then and am doing it upto now.

**Did you have a mentor (someone else who inspired you) or you were attracted by the profession itself?**

While I was starting there was no one. It was books that I considered as my mentors. There were 3 books about programming. I didn't read them because I can't understand them at that time. I was inspired by the cover. To remember one was titled programming 101 and it was an introduction to programming. The cover had numbers 001100 all over it. How can all the Microsoft and other software's are programmed with just 0 and 1 was the question that popped up to in my mind. I said this is a fascinating field and I got to try this.

**What efforts have you done to reach this level concerning education, training, and other skills?**

Once I understood the concept of programming I wanted to take programming courses while I was 9th grade. Then I went to Erena School and enrolled that summer there. We only had class for 3 weeks and can't continue due to some technical problems. One thing I got advantage of at that time was the CD of programming language. It was of VB6 with its manual. From then I started learning on my own on my free time while I was 10th Grade.

After the matriculation I already knew I will pursue computer related fields. Until then I only knew computer science but at that time the Eri Youth festival were being held. And there were projects presented by Computer Engineering students that attracted me. I was asking them what did they study and they told me computer engineering. But at that time I was tempted to choose medicine as students with 4 GPS were pursuing that field. At that time the toss up was made because the number of students applied were greater than the number the department can handle. To my surprise I didn't pass the toss up and pursued engineering. I want my juniors from such temptation in the future and pursue their passion individually. After my freshman in engineering I pursued computer engineering. Until I enter college I had only known one programming language VB6. After I got in college I studied 6 languages in addition. On top of that I learned scientific method of programming like software engineering.

## Did you take any internships?

No internship at all.I was doing everything independently and from my own initiative.

## What were the projects you were involved in?

The first three ones were when I was 10th grade.Why I don't know most of my projects focus on educational type.I don't do it by thinking or deliberately.May be it was because I was a student or.Until now I focus on educational softwares that aid educational and learning process.

The first 3 softwares I made were initiated from my own problem.At that time I had difficulty while studying the organs of different systems of the human body in biology.Also in chemistry I had some problems with the periodic table.So I made softwares that help me study.In the biology software the system with its organs are viewed with the name of the organs listed on one side.So you match the organs with their proper names.And in chemistry the periodic table is viewed.You can study about an element either by selecting it from the periodic table,entering periodic number or name of the element. It saves time instead of referring books as the whole information is displayed by entering either of the above. And the third was about general knowledge.It just like exam you have pre-determined time to answer all the questions.I had plans to improve it with matriculation questions but I had to prepare for the matriculation exam myself so I couldn't.

Everything was driven from my own and other people's problems. I was doing all in my part time.It was more like a hobby.Even finally when I fin-

ished them I distributes for free to schools.

They were presented in school exhibition and expo festival (2008).Besides I worked learning database for erena and filtetschool(students and finance database).

After my national service I continued making educational softwares. The first one was while I was third year and was aimed for first grade students for learning Tigrigna Alphabets. It took two years to complete it. It was presented and awarded in Sawa festival and ExpoThe idea was proposed by Filtet Elementary and Junior School. Therefore, me as a computer programmer and teacher YacobMerhawias as a languageexpert.The work was busy there were sound to be recorded in studio and pictures.The initial idea was to make it video.But I insisted on making it software because its interactive.

My principle (also used in our senior project) is for every kid to be familiar with a computer.I was using computer when I was 1st Grade.I went to my father's office on weekends. Though I didn't know it I was just trying it by pressing keys,painting and other things.This familiarizes you with how to control mouse, press keys and other general skills .If you are trained already with those then next time it becomes easier for you to do and learn advanced skills.Therefore the essence of interactive idea was for kids to learn themselves.After we had seen the result of this we prepared another program for learning mathematics.The concept was similar but with some improvements in graphics and more interactive. They both had mobile application versions.

At the same time we started another project with my colleague. The project aimed for the medium businesses in our country. They don't use any accounting software. So we named the software Setarit. It really helps as its name suggests. It took three years to be completed and it's on market now. First it was computer application but now it's with its mobile application. Initially we installed it in one company and we were improving it by testing and getting feedback. It has now been implemented in around 15 businesses.

While I was in fourth and fifth year my focus was on mini project and senior project. My first dream was to make an operating system in Tigrinya as I thought it's the ultimate limit.

When I suggested it to our team they reviewed and decided to make it. It was very intensive and tiresome as we had started it from scratch. We had reference books, documentations and there was a website completely focusing on how to work it out. It includes coding step by step. Around 80% of our senior year was dedicated for it. There were times where we missed class. It was successful finally and was awarded in Sawa Festival. And we presented it in the Conference of Eritrean researches that was held in Asmara Palace as it was selected from all projects presented in EIT. We have plans to make its second version. Now it's only in Tigrinya and English but we have plans to develop it in all languages of our ethnic groups. Of course we are going to need some language experts.

Our first idea was started from the fact that there a lot of computers outdated in different companies and

ministries in our country. So why do not we use them for the rural areas by making minimum system requirement OS (that can run in 64MB RAM computer). We took kernel from linux. And we made the interface, language and application on our own.

### **What was your mini project?**

Kkkk... what makes it funny is we made it from our own problem. Its better if you can do things ahead of time (before you face the problem) but we didn't reach that level I think. At that time we were playing poker cards on our free time. So an idea came up on why don't we make it with computer and network based, so everyone can play with it. We also used to play Call of Duty in network. That was our mini project. It had additional features like chat and sending pictures.

### **What about after college?**

After college I made mobile applications like habesha joke, habeshacartoons. I made them for researching on its acceptance and how to market application. And to use our own language instead of foreign language.

End of Part One Interview wth Eng. Sham Mesfin. In the next Mentor edition we will come with his future plans and the challenges and failures he faced and the message he want to send to his junior students.

# Theme Of The Month

A photograph showing the back of a person wearing a dark blue hoodie and dark pants. The person is standing on a paved road that curves away from the viewer into a grassy field under a cloudy sky.

You possess a kind of inner force that guide you toward your Life's Task-what you are meant to accomplish in the time you have to live. In childhood this force was clear to you. It directed you toward activities and subjects that fit your natural inclination that sparked a curiosity that was deep and primal. In the intervening years, the force tends to fade in and out as you listen more to parents and peers, to the daily anxieties that wear away at you. This can be the source of your unhappiness-your lack of connection to who you are and what makes you unique. The first move toward mastery is always inward-learning who you really are and reconnecting with that innate force. Knowing it with clarity, you will find your way to the proper career path and everything else will fall into place. It is never too late to start this process.

Taken from the book **Mastery** by  
Robert Greene

DISCOVER  
YOUR CALLING

# Mentor Questions Tricky

1. Some months have 30 days, some months have 31 days. How many months have 28 days?
2. If a doctor gives you 3 pills and tells you to take one pill every half hour, how long would it be before all the pills had been taken?
3. I went to bed at eight 8 'clock in the evening and wound up my clock and set the alarm to sound at nine 9 'clock in the morning. How many hours sleep would I get before being awoken by the alarm?
4. Divide 30 by half and add ten. What do you get?
5. A farmer had 17 sheep. All but 9 died. How many live sheep were left?

## **Answers for the last edition questions:**

1. The man is very, very short and can only reach halfway up the elevator buttons. However, if it is raining then he will have his umbrella with him and can press the higher buttons with it.
2. The surgeon was his mother.
3. It was day time.
4. A square manhole cover can be turned and dropped down the diagonal of the manhole. A round manhole cannot be dropped down the manhole. So for safety and practicality, all manhole covers should be round.
5. The poison in the punch came from the ice cubes. When the man Drank the punch, the ice was fully frozen. Gradually it melted, poisoning the punch.
6. The man had hiccups. The barman recognized this from his speech and drew the gun in order to give him a shock. It worked and cured the hiccups- so the man no longer needed the water.

# PHOTOGRAPHIC ESSAY



MUSSIE



Merry Christmas

MUSSIE



# 11 Benefits Of Pursuing Your Passions

By Lori Bumgarner @ [www.panashstyle.com](http://www.panashstyle.com)

Last week, I talked about what it means to be “**passion poor**” (feelings of hunger and emptiness when we are living without passion). This week, I want to talk about what “**passion rich**” looks like. It includes all the benefits of pursuing your passions. Benefits that come from living a life with passion and making our passions our plan, not just our dream.

## Passion Rich

When it comes to life in general, there are many benefits to pursuing our passions, whether they’re a hobby or a form of service to our fellow man, or both. These benefits include:

1. A simplified life and personal freedom. With all the chaos and information overload in today’s world, there’s something very freeing about going back to the basics of our interests and joys. Over time we tend to complicate what was once something simple. This introduces confusion, and eventually our passions and reasons for doing something get misplaced. Rediscovering our passions (or discovering new ones!) can bring some simplicity back into our lives. This can lead to new freedom in our day-to-day routines.

2. Greater self-awareness and self-confidence. Many times we feel pressure from family or society to be something we’re not. This can cause our confidence to plummet because we aren’t operating in our own

strengths and interests. Taking time alone to listen to what our soul is telling us and to recognize our strengths and interests leads to authenticity, which in turn leads to **greater self-confidence**.

3. Expansion of our comfort zones. As our self-confidence increases, we begin to push the boundaries of our comfort zones. It’s in this expanded territory where we can discover new passions we never knew we had!

4. Empowerment. With increased self-confidence and new strengths and interests, we become empowered to combine our passions and take them to a new level that can benefit a greater whole.

## Making A Living With Our Passions

Oftentimes, when we’re pursuing our passions authentically, our passions become our career or vocation. We’re actually able to get paid to do the things we love to do! For some of us, we kind of just “fall” into such a situation. For the rest of us, we have to make a conscious, intentional decision to make a career change, and then figure out how to do that. This frequently involves changing our vision, overcoming our fears, and maneuvering through a variety of obstacles. The benefits of taking our passions to the next level and turning them into our vocations include:



5. Work we love. There's nothing more life-draining than being stuck in a job that doesn't bring us some form of joy and doesn't utilize our strengths and interests. Now, I must say what I've always told my clients when coaching them on their careers. None of us are ever going to love 100% of our job 100% of the time. But if we can find something we love at least 60% of the time, then we can be enriched and fulfilled in our work. And yes, there are ways to find such work!

6. Professional growth and career success. When we're doing what we love, we can't help but excel and grow in our area of expertise. This can lead to rapid promotion and career success.

7. Professional freedom. In pursuing our passions as a living, we can have the opportunity to be our own boss which gives us professional freedom such as choosing who we want to work with, making our own schedule, and even obliterating salary caps!

8. Fulfillment of our vocational purposes. There's nothing more rewarding and fulfilling than knowing we're

doing the work we were called to do. This happens when we're using our skillset to do what we love and what benefits others which results in a return. It's what I call "**finding your sweet spot.**"

## Life And Career In Harmony

When we're able to incorporate our passions into both our careers and our lives, we get to experience the ultimate benefits:

9. Cohesiveness and harmony in work and life. When we experience this benefit, the lines between work and life are blurred because our work often doesn't feel like work. The joy we experience in our work spills over into our lives, and vice versa.

10. Increased satisfaction overall. The cohesiveness mentioned above leads to an overall satisfaction with every area of our lives.

11. Being part of something bigger than ourselves. As humans we are all born with a desire to fulfill a purpose that fits into the bigger picture and grand scheme of our world. We want to leave the legacy of having made an improvement and impact on our surroundings in our time here on earth. We accomplish this through the unique passions and abilities with which we've been equipped.

***Our passions are meant to be discovered, pursued and used. They were never meant to lie dormant or be hidden under a rock!***

# ARE YOU A RIGHT OR LEFT BRAIN THINKER?

## INTRODUCTION

### HEMISPHERIC SPECIALIZATION

The expression —left- brain/right brain—refers to specialized functions of the two hemispheres. Scientific research with healthy human subjects used a new brain scan technique called Positron Emission Tomography (PET) scan to confirm these findings. Individuals were connected to a machine that mapped brain activity by lighting up to show which part of the brain was active. In a typical experiment, the researcher gave each subject a series of tasks to perform, and then recorded which side of the brain was most active. Results indicated that activities involving numbers, logic, word puzzles, sequential tasks and analysis were more active on the left side of the brain; whereas activities involving music, imagination, colors, or creative expression were more active in the right hemisphere. Evidence suggests that the right- brain has a global bias while the left- brain has a local bias. In other words, the right hemisphere sees the picture and the left hemisphere sees the components of the picture. The distinctiveness of the left and right- brain functions has led to the notion that humans have two brains. Although research shows that each hemisphere may be in charge of a specific set of functions, neither side has exclusive control of those functions. Both sides can interchange

roles.

The illustration on the next page graphically displays a summary of those functions for both sides of the brain.

### BRAIN HEMISPHERE LEARNING

Research identifies the left- brain as the Academic Brain because educators generally emphasize its processes in the traditional classroom, resulting in certain groups using hemisphere specialization to explain limitations of traditional learning. On the other hand, research identifies the right- brain as the Artistic Brain because it is in charge of creative talents.

Although fields such as science and medicine now pay more attention to these brain processes, education has traditionally neglected the right side, leaving half of a student's brain potential undereducated. However, more and more school systems are using whole- brain learning techniques.

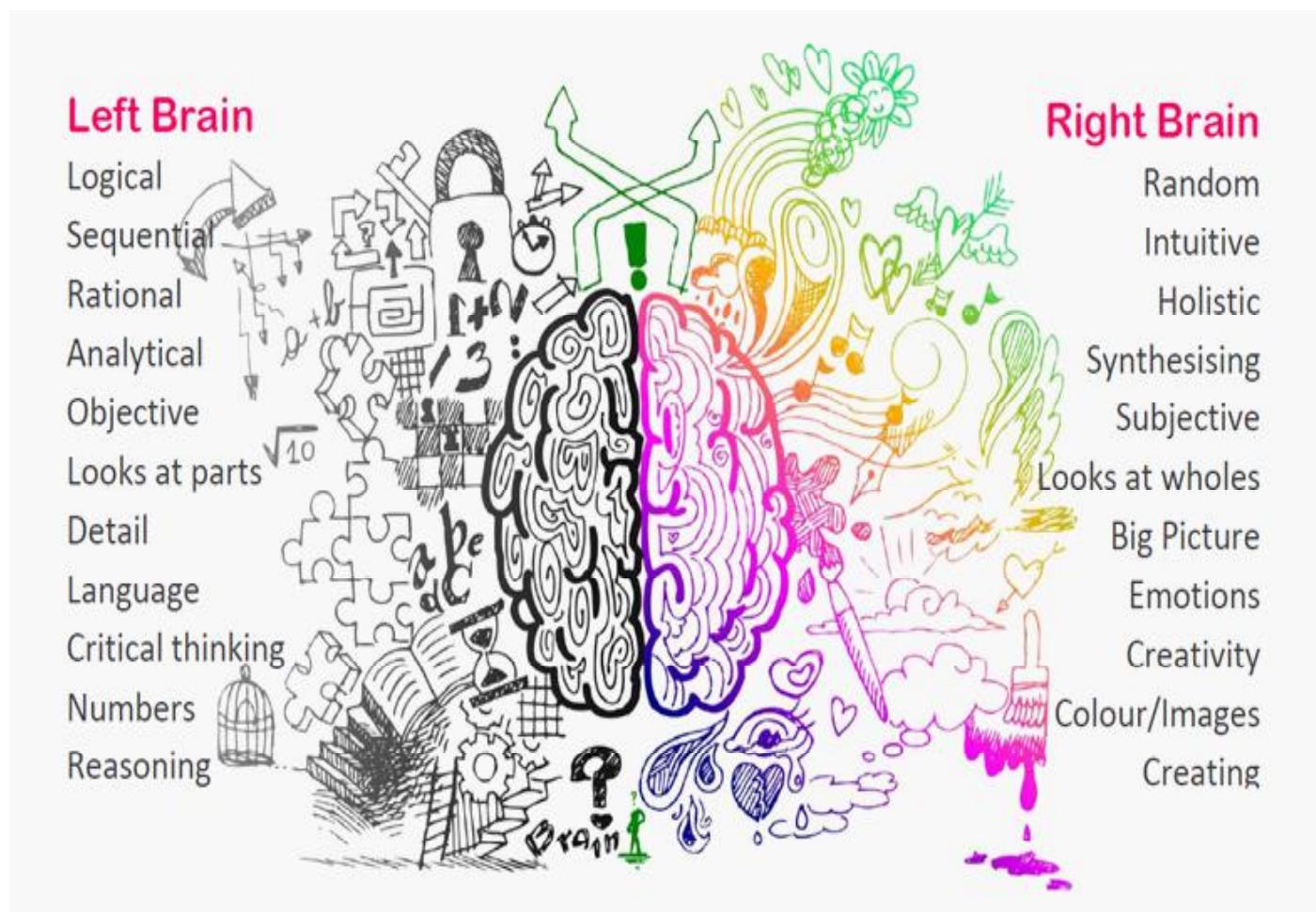
Recently, educational researchers have shown that a balanced involvement of both sides of the brain in the classroom can create surprising learning gains in many types of students: children, adult learners, the so- called "mentally dull," and the genius. Thus, these studies conclude that learning can proceed at astounding rates when teachers have students integrate both sides of their brain in a lesson.

For example, kindergarten teachers who use music, dance, storytelling, drama, or numerous other right-brain activities as part of their routine teaching strategy not only aid the left brain learning of their students, those also learn at incredible rates. After third grade, when the use of these aids typically diminishes, learning rates drop significantly as well.

## THE DOMINANT SIDE OF THE BRAIN

This lesson introduces you to the concept of brain preference, or brain hemisphere dominance, and explains brain preference from a personal, cultural, and career perspective. In class, you may have the opportunity to complete a brain preference test that will tell you which part of your brain you prefer. As more knowledge about the brain became

available, professionals in fields such as science, medicine, and education asked more questions. One interesting line of research explored the question of whether people rely on one side of the brain more than the other. Is one side of the brain dominant? Researchers believe that brain dominance determines a person's preferences, problem-solving style, personality characteristics, and even career choices. For example, a right-brain individual will quickly get a feeling for a situation, while a left-brain person will usually ask a lot of questions first. The following chart reflects additional differences between left and right-brain dominance. There is nothing good or bad about either preference. Both orientations can be equally successful in accomplishing a single task; however, one may be more appropriate over the other depending on the situation.



## HOW BRAIN PREFERENCE DEVELOPS

Researchers have determined that brain preference does not come from a person's conscious choice about which side of the brain to use. However, what they want to know more about is whether children inherit their brain preference from their parents (obtained from nature), it is socialized from early childhood experiences (obtained from nurture), or a combination of both. Different studies on how brain preference develops suggest that:

- Dominance is present at birth, but that children may not be able to establish it well until they are five years old —while other studies suggest that children continue to develop their brain preference until they reach puberty.
- A strong relationship exists between the brain preference of infants and their parents, suggesting that genetics has a major influence on brain preference.
- Early childhood experiences, or nurturing, can play a major part in brain preference development

## DOMINANCE AND CAREER CHOICE

As children grow, they will continue to prefer activity on one side of the brain, which eventually can reflect in their choice of a major in college or a career preference. College students who major in literature and the humanities show a greater degree of right brain activity, compared to those majoring in science and engineering, who show high left brain activity. Studies have also indicated that brain dominance can be inferred from a person's occupation. Typically, lawyers, chemists, mathemati-

cians, and accountants are left brain dominant because these occupations require logical, sequential, and analytical skills. Characteristically, musicians, actors, athletes, and artists are right-brain dominant because they rely on right-brain functions such as body sensing, rhythm, color imagery, and spatial orientation. Distinctions in brain preference also exist in the same occupation. Corporate and contract lawyers are often more left-brain oriented than domestic and criminal lawyers. Rock musicians and recording artists are often more right-brain dominant than classical musicians. Successful managers and administrators in the same field may have different brain dominances. The manager who works well with people most likely have a right-brain tendency, while administrators who do a lot of planning will tend have the left-brain dominance. Careers in the military follow this same pattern —some are more left-brain oriented while others are more right-brain oriented.

## YOUR OWN BRAIN PREFERENCE

By now you are probably very curious about your own brain preference, and have definite feelings about which side you prefer. Knowing your brain preference is important because it determines certain likes, dislikes, skills, and weaknesses. These preferences may develop very early in your life and may become more extreme as you develop and grow older. For instance, if you are good at basketball, but not at reading, you would most likely spend more time playing basketball than reading.

Thus, your abilities and personality may become one-sided. To become a well-rounded, actualized person, you need to consciously develop the less preferred side of your brain.

## THINKING BETTER

In today's society, a crisis exists in how people think—that is, oftentimes people do not think independently or creatively. This lesson gives you the opportunity to examine how you think, how you can improve your thinking process, your problem - solving style, and how to balance brain functions to obtain better results. Successful people know how to use their whole-brain functions in order to solve their problems successfully.

### YOUR PROBLEM -SOLVING STYLE

Would you like to be able to solve your problems, including those that you consider to be very difficult, with some form of a process or style? You probably already do, but have never thought about it before. In the activities for this lesson, you will have the opportunity to complete an exercise that will test your problem - solving style to see if it is left or right-brain. Both sides have advantages and limitations; however, depending upon the circumstances, one of the sides or styles will provide the lead for you to make the best solution. For best results, learn how to combine the left and the right sides of your brain to solve problems, especially those very difficult ones.

## CONCLUSION

Knowing about the functions of the brain is good, but knowing something definite about your own brain is better. So far you know that the left

and right-brain hemispheres have specialized functions and, in many instances, educators emphasize the left-brain and neglect the right-brain.

During your stages of learning, growth, and personal development, the world can and will present different types of challenges that will place complex demands on your brain. Know how to use your brain efficiently. Know your individual brain preference and your problem - solving style, then use both sides of your brain to set and accomplish goals and to tackle those difficult challenges.

## LEFT/RIGHT BRAIN DOMINANCE TEST

Cognitive-Style Quiz: Choose the one sentence that is more true. Do not leave any blanks.

1. A. It's fun to take risks.  
B. I have fun without taking risks.
2. A. I look for new ways to do old jobs.  
B. When one way works well, I don't change it.
3. A. I begin many jobs that I never finish.  
B. I finish a job before starting a new one.
4. A. I'm not very imaginative in my work.  
B. I use my imagination in everything I do.
5. A. I can analyze what is going to happen next.  
B. I can sense what is going to happen next.
6. A. I try to find the one best way to solve a problem.  
B. I try to find different answers to problems.

7. A. My thinking is like pictures going through my head.

B. My thinking is like words going through my head.

8. A. I agree with new ideas before other people do.

B. I question new ideas more than other people do.

9. A. Other people don't understand how I organize things.

B. Other people think I organize well.

10. A. I have good self-discipline.

B. I usually act on my feelings.

11. A. I plan time for doing my work.

B. I don't think about the time when I work.

12. A. With a hard decision, I choose what I know is right.

B. With a hard decision, I choose what I feel is right.

13. A. I do easy things first and important things later.

B. I do the important things first and the easy things later.

14. A. Sometimes in a new situation, I have too many ideas.

B. Sometimes in a new situation, I don't have any ideas.

15. A. I have to have a lot of change and variety in my life.

B. I have to have an orderly and well-planned life.

16. A. I know I'm right, because I have good reasons.

B. I know I'm right, even without good reasons.

17. A. I spread my work evenly over the time I have.

B. I prefer to do my work at the last minute.

18. A. I keep everything in a particular place.

B. Where I keep things depends on what I'm doing.

19. A. I have to make my own plans.

B. I can follow anyone's plans.

20. A. I am a very flexible and unpredictable person.

B. I am a consistent and stable person.

21. A. With a new task, I want to find my own way of doing it.

B. With a new task, I want to be told the best way to it.

## TO SCORE

1. Give yourself one point for each time you answered "A" for questions: 1, 2, 3, 7, 8, 9, 13, 14, 15, 19, 20, 21.

2. Give yourself one point for each time you answered "B" for questions: 4, 5, 6, 10, 11, 12, 16, 17, 18.

3. Add all points. Totals imply:  
0-4: strong left brain

5-8: moderate left brain

9-13: middle brain

14-16: moderate right brain

17-21: strong right brain

## UNDERSTANDING YOUR RESULTS

You now know whether your preference tends to the left, right, or middle brain, but what does this mean? First, for those of you who came out to be strong to moderate left- or right-brain dominant, be assured that your other hemisphere is alive and well; however, the results do mean that you tend to lead with your dominant hemisphere.

For example, if you are right-brain dominant, it is your intuitive, emotional right hemisphere that guides the decisions you make throughout the day. If you are left-brain dominant, it is your sequential, time-oriented left hemisphere which tells you how to think, what to believe, and what choices to make.

Those who are middle-brain dominant tend to be more flexible than either the left- or the right-brain folks; however, you often vacillate between the two hemispheres when you make decisions. You sometimes get confused when decisions need to be made because, neurologically speaking, you could do most tasks through either a left-brain or a right-brain method!

## LEFT-BRAINED PEOPLE

1. Left-brained people are more focused on logic and structured activities.
2. People like this love to make lists, perform well in middle management, are highly logical and analytical and usually very reliable.
3. They tend to store information in names and words.
4. They think in order (first, next, etc.) They would rather be told how to do something than have it demonstrated.
5. They thrive in the classroom that involves a lot of listening.
6. They enjoy talking and writing things down.
7. They prefer discussing in-group projects. They like making and following structured rules.
8. They don't like when their routine is interrupted.

## RIGHT-BRAINED PEOPLE

1. The more intuitive and random in processing information and the more apt you are to store information primarily in pictures.
2. When asked to recall an event or a person, the right-brained person will flash instantly on an image.
3. A right-brained person is more likely to remember a face and a left-

brained person would remember the name.

4. Although this person has a strong visual memory, he/she tends not to have the ability to perform logical, linguistic tasks.
5. Right-brained people tend to view and respond to the world with pictures and physically; unfortunately the world (especially schools) tends to view and respond with words.

## WHOLE-BRAINED PEOPLE

1. These people, in some respects, have the best of both worlds.
2. They have the wonderful ability to shift tasks to the hemisphere of the brain that's best equipped to tackle them.
3. When it comes to reading directions or doing a logical exercise, these people are efficient and able to sequence enough to complete the project.
4. They also enjoy creative abilities and can paint, create music, and use their intuition. They make good CEO's because they can solve larger problems and pay attention to detail to apply to a situation.
5. The whole brained individual can see the forest and the trees. But, he/she may lack the organizational strengths of a left brained person and the creative brilliance of a right-brained person.

# AFRICAN HERITAGE EXPO



**Was Presented by African Music & Heritage Festival & SUNO'S Center for African and African American Studies**

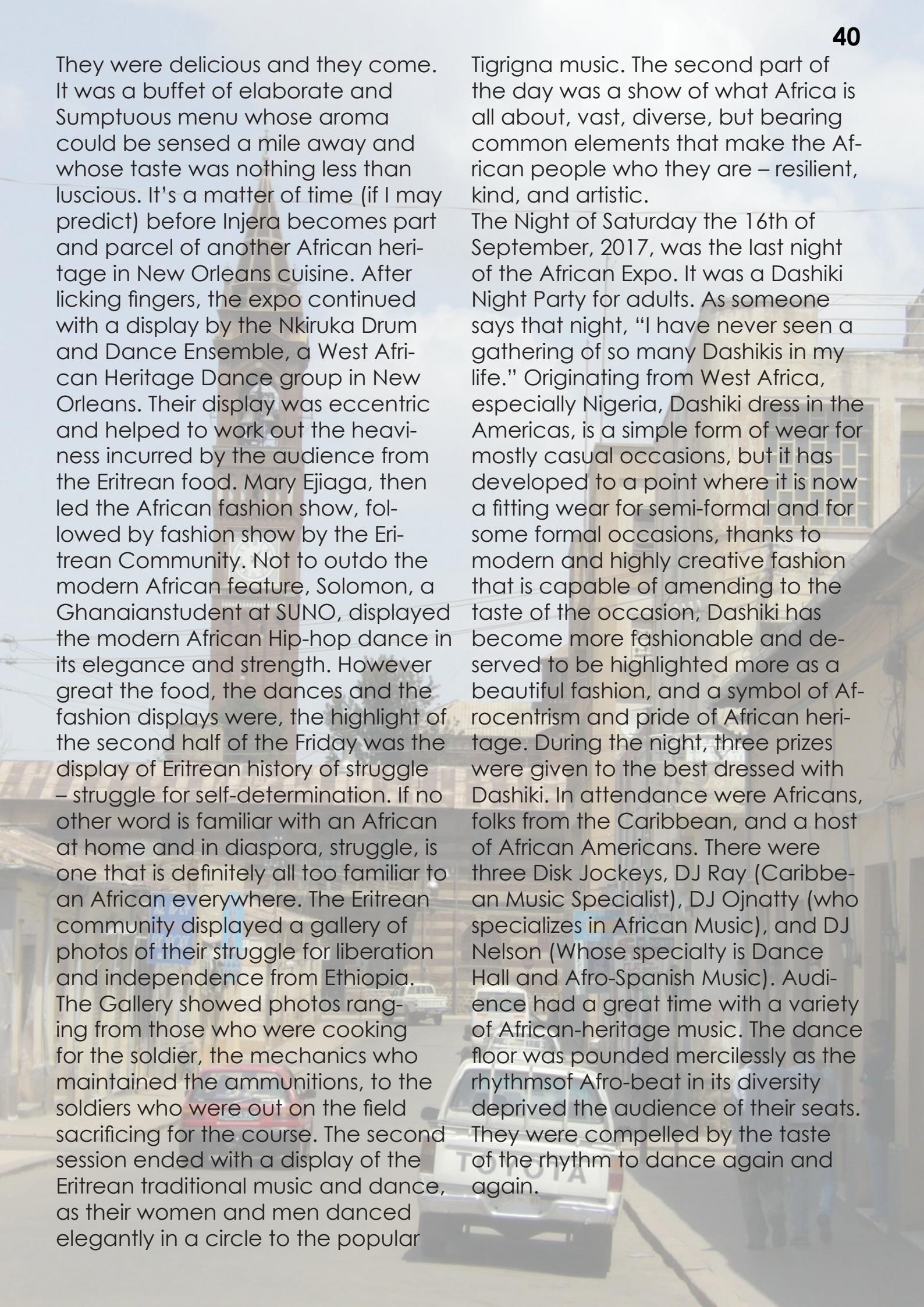
The history of New Orleans connection to Africa goes as far back as to the first time African were brought to the United States. While that link is notable in museums and stories in some corners of New Orleans, and while some of the traditions such as Second Line, Super Soul Sunday, Okra, Gumbo, Jambalaya and the like, are evidence of such heritage, very little is present in the modern timewhich enhances a continuous fuse between Africa or African migrants and New Orleans or New Orleanians until now. An organization by the name African Music & Heritage Festival (AMHF), in Collaboration

and Partnership with the Southern University at New Orleans' Center for African and African American Studies CAAAS, are promoting that heritage, educating the young and adults about it, and conducting events and educational programs that maintain and highlight the heritage. Amongst the Programs presented this year by this partnership is the African Heritage Expo. The Program presented two days events. The first day, Friday the 15th of 2017, was in two parts. The morning session comprised of a presentation on a topic on The Dynamics of African Identity:

The Diversity of African Expressions. It was presented by Tosin Gbogi, a young dynamic Post Graduate Student from Nigeria. The presentation highlighted the diverse nature of Africa within Africa, and the diverse ways the heritage is expressed by different peoples all around the world. By the presentation, it was clear that the answer to the question of who is an African, is not as simple as one would ordinarily imagine. More complex, is the question of who claims and/or celebrate his or her African Heritage, and who should. The answer can be as cumbersome but rich that sometimes only the individual, (amongst African at home and in diaspora), can answer that question for him/herself. The presentation was followed by a talk show with five panelists of diverse African heritage. Some of the Panelists were an African from the motherland, an African American, an Eritrean America, and a Jamaican American. They proudly answered questions and talked about how diverse they express their common heritage, how proud they feel about their heritage, and what they feel should be done more to continue to enhance that heritage. The talk show was followed by African Quiz Bowl. Like Africa and its heritage, the questions were also as diverse and encompassing; they were also didactic. For instance, two tricky questions were designed to address the stereotype of thinking of Africa as mainly sub-Saharan Africa and sometimes ignoring the other vast African territories. The first of the two questions was: Which country in sub-Saharan African did President Barack Obama first visited and when? The second question was: Which

country in African did President Barack Obama first visited and when? We received the reaction from the audience as we anticipated. Some quickly thought that both questions were the same, and that one was merely an erroneous repeating of the other. Of course, the simple fact is that Egypt June 4, 2008, which is the answer to the second question is as African as the Pope is a Catholic; but it is different from Ghana, November 15–18, 2009, the answer to the first question, which is part of the sub-Saharan Africa. Africa is as proud of the cradle of civilization (Egypt), as it is proud of the Ancient Ashanti Empire (Ghana). There were questions that heighted the United States links and activities in Africa such as the USAFRICOM or AFRICOM, which is the United States African Command – a United States Armed forces conducting activities in the African continent. For some in the audience, it is the first time they were aware of such United States activities and ties to Africa. The first session ended with light refreshment provided by SUNO's CAAAS. It was attended by high school students mostly from Saint Mary Academy School, who paid great attention and enjoyed the quizzes and the small prizes that came along. Also in attendance were college students mostly from SUNO, and other students and adults around the New Orleans metropolis.

The afternoon session started with the Eritrean Community in New Orleans providing its traditional cuisine that Comprised of Tsebhi (Stew), Zigni (a stew in tomato sauce, pepper and other traditional ingredients), and Injera. (flatbread with a unique soft texture).



They were delicious and they come. It was a buffet of elaborate and sumptuous menu whose aroma could be sensed a mile away and whose taste was nothing less than luscious. It's a matter of time (if I may predict) before Injera becomes part and parcel of another African heritage in New Orleans cuisine. After licking fingers, the expo continued with a display by the Nkiruka Drum and Dance Ensemble, a West African Heritage Dance group in New Orleans. Their display was eccentric and helped to work out the heaviness incurred by the audience from the Eritrean food. Mary Ejia, then led the African fashion show, followed by fashion show by the Eritrean Community. Not to outdo the modern African feature, Solomon, a Ghanaian student at SUNO, displayed the modern African Hip-hop dance in its elegance and strength. However great the food, the dances and the fashion displays were, the highlight of the second half of the Friday was the display of Eritrean history of struggle – struggle for self-determination. If no other word is familiar with an African at home and in diaspora, struggle, is one that is definitely all too familiar to an African everywhere. The Eritrean community displayed a gallery of photos of their struggle for liberation and independence from Ethiopia. The Gallery showed photos ranging from those who were cooking for the soldier, the mechanics who maintained the ammunitions, to the soldiers who were out on the field sacrificing for the cause. The second session ended with a display of the Eritrean traditional music and dance, as their women and men danced elegantly in a circle to the popular

Tigrigna music. The second part of the day was a show of what Africa is all about, vast, diverse, but bearing common elements that make the African people who they are – resilient, kind, and artistic.

The Night of Saturday the 16th of September, 2017, was the last night of the African Expo. It was a Dashiki Night Party for adults. As someone says that night, "I have never seen a gathering of so many Dashikis in my life." Originating from West Africa, especially Nigeria, Dashiki dress in the Americas, is a simple form of wear for mostly casual occasions, but it has developed to a point where it is now a fitting wear for semi-formal and for some formal occasions, thanks to modern and highly creative fashion that is capable of amending to the taste of the occasion, Dashiki has become more fashionable and deserved to be highlighted more as a beautiful fashion, and a symbol of Afrocentrism and pride of African heritage. During the night, three prizes were given to the best dressed with Dashiki. In attendance were Africans, folks from the Caribbean, and a host of African Americans. There were three Disk Jockeys, DJ Ray (Caribbean Music Specialist), DJ Ojnatty (who specializes in African Music), and DJ Nelson (Whose specialty is Dance Hall and Afro-Spanish Music). Audience had a great time with a variety of African-heritage music. The dance floor was pounded mercilessly as the rhythms of Afro-beat in its diversity deprived the audience of their seats. They were compelled by the taste of the rhythm to dance again and again.

The African Heritage Exposition was brought to a close at the end of the Saturday night with the hope that it will be repeated more times in the future.

With another successful event, the African Music & Heritage Festival in partnership, sponsorship and collaboration with SUNO CAAAS, hopes to continue their mission of creating an avenue where African heritage may be highlighted, where others could be educated about the heritage, and where people of such heritage and those who wish to know more about it and admire it, can actually live it out loud and unapologetically. Right now, they are planning the second hosting of the Afro-Carnival Ball (ACB) that debuted earlier this year during Mardi-gras. The African Carnival Ball, is a night of glamour, elegance, and fun – African way. It is a ticketed event that showcases African form of Carnival in mood and spirit. The Carnival features Royals of the Carnival (King & Queen), who are adorned with royal robes and regalia. The royals enter the arena with spectacle of music, entourage, and ovation. With the crowning of the king and queen, presentation of their plaques, and a ribbon of royalty and reign, the king and queen experience a night of tradition and unquestionable glamor. Also, with tasty African and American cuisine, a thunderous Afro, Caribbean and American beat, a dance floor where loneliness is dearth, and a mouth full of booze, the Chiefs of the Carnival

and the audience leave the venue with a sense of bliss and excitement that is rare even in a city as fun as the Big Easy. ACB is a red-carpet event that enables the participants to take numberless photos by the banner, and it gives an opportunity to people for socializing and comradery. It is a night where tradition meets fun. Besides the different programs that this partnership provides, the ultimate goal of the AMHF is to debut what it hopes will be an annual festival at the Congo Square in the near future. In the meantime, what this partnership has been able to do so far is made possible thanks to the department of African and African American Studies at SUNO with their sponsorship, especially the effort of the Director of the center, Dr. Clyde Robertson. The Eritrean Community in New Orleans have also played a vital role in the successes so far, especially Mr. Biniam who is currently the president of that community. Finally, the four pillars of AMHP of Mr. Fidel Okoro, Mr. Saheed Olalekan, Mr. Precious Apemiyé, and Mr. Paul Okhakia. They have great hopes for the organization and hopes to eventually propel it to its highest level. The African Heritage Expo is one of the few programs and events that is jumpstarting what is to extend to programs African Film Festival, African Day Celebration, African Traditional Drum Group and lessons, and the like. Stay tuned as this vibrant organization is taking its roots and first steps in the heart of ABE (Africa in the Big Easy).



# With Coconut Oil You Can Reverse Cavities and Decayed Teeth

From [StyleCraze.com](http://StyleCraze.com) By Dushyant

Whenever you hear the term ‘coconut oil’ being mentioned, the first impression is obviously that of the applications of it that concern the hair. Coconut oil is used by many to ensure optimal hair growth and to provide the right amount of shine, smoothness, and strength to their locks.

However, you might be surprised to find out that there are certain “dental” uses of coconut oil as well! Oral health is an often-neglected aspect of overall health, the importance of which cannot possibly be

stressed enough. Correlations between oral health problems and diseases such as heart disease, diabetes, stroke, and gum disease (in pregnant women) have been scientifically proven.

Therefore, maintaining optimal oral health is not just great for your mouth, but for the rest of your body as well, and coconut oil can help you do just that! Let’s try and understand the significance of coconut oil in terms of oral/dental health with the help of a few scientific pointers:

## 1. Antibacterial & Antifungal Properties

According to a research document by the Journal of Clinical and Diagnostic Research, coconut oil contains an antibacterial and antifungal component called ‘lauric acid’.

Lauric acid, combined with other ‘medium chain fatty acids’ present in coconut oil, is said to have strong antibacterial properties that help in maintaining overall oral health. Coconut oil, therefore, is a potent antibiotic for all the nasty bacteria that could be causing issues in your mouth!



## 2. As Effective As Antibacterial Mouthwashes

As per a research paper by the Journal of International Society of Preventive and Community Dentistry presented in 2016, coconut oil has been proven to be as effective as mouthwashes containing chlorhexidine for reduction of *Streptococcus mutans* bacteria.

*Streptococcus mutans* is found in the mouth and is primarily responsible for tooth decay, cavities, etc. Swishing coconut oil in the mouth in a similar

way to chlorhexidine-based mouthwashes helps in reducing *Streptococcus mutans* in the oral cavity, thus preventing tooth decay and ensuring optimal oral health.



## 3. Plaque Reduction

In a 2015 study by the Nigeria Medical Association, ‘coconut oil pulling,’ which refers to the process of swishing coconut oil in the mouth for a few minutes, has been suggested as being effective for plaque reduction (4).

Additionally, the study has also concluded that oil pulling with coconut oil can also decrease gingivitis caused by the incidence of plaque in the oral cavity.

Now that we’re familiar with the scientific benefits let’s try and understand how coconut oil can be used most effectively and efficiently to help overall oral health.

The terms ‘oil swishing’ and ‘oil pulling’ come from ancient Ayurvedic texts that not only provide clear directions for the methods of using coconut oil for optimal oral/dental health but also enlist their benefits.

These methods have been used for several generations, specifically in the Indian region, as a preventive measure for keeping oral diseases at bay.

Here is how you too can carry out the process of oil pulling and gift yourself great oral health!

**Timing:** Oil pulling has to be done as the very first thing in the morning after you wake up. Make it a part of your daily routine – wake up and do it immediately, before anything else! You are not supposed to eat or drink anything before this.

**Quantity:** Take about 1-2 tablespoons of coconut oil in your mouth and swish it around your mouth for 10-20 minutes. 20 minutes is the usual recommended time for this activity.

**Process:** Make sure that the swishing of coconut oil in your mouth is done properly. Try forcing it through

the gaps between your teeth and make sure that it covers every part of the mouth properly. Don't rinse or replace before the time is up.

**After Swishing:** Spit out the coconut oil and rinse your mouth with either normal water or salt water. Once this is done, you move on to brushing your teeth normally.

Oil swishing/oil pulling is best done as a regular activity for a minimum of 4 times a week, although daily practice is highly recommended as well. Oil pulling is completely natural, absolutely healthy, and a great way to start your day.

Now that this ancient Ayurvedic remedy/preventive measure for oral health issues has received approval of the scientific community, there's no reason for you to stay away from it. Get yourself some coconut oil and make it a part of your oral health regimen! You won't regret it at all.



# 10 Bad Habits You Must Eliminate from Your Daily Routine

Human Behaviour in Numbers

In the following series, Dr. Travis Bradberry's captivating lessons on Emotional Intelligence will be covered. Dr. Travis Bradberry is an award-winning co-author of Emotional Intelligence 2.0 and the co-founder of TalentSmart® the world's leading provider of emotional intelligence tests and training serving more than 75% of Fortune 500 companies. His bestselling books have been translated into 25 languages and are available in more than 150 countries.

You are the sum of your habits. When you allow bad habits to take over, they dramatically impede your path to success. The challenge is bad habits are insidious, creeping up on you slowly until you don't even notice the damage they're causing.

"Chains of habit are too light to be felt until they are too heavy to be broken." – Warren Buffett

Breaking bad habits requires self-control—and lots of it. Research indicates that it's worth the effort, as self-control has huge implications for success. University of Pennsylvania psychologists Angela Duckworth and Martin Seligman conducted a study where they measured college students' IQ scores and levels of self-control upon entering university. Four years later, they looked at the students' grade point averages (GPA) and found that self-control was twice as important as IQ in earning a high GPA.

The self-control required to develop good habits (and stop bad ones) also serves as the foundation for a strong work ethic and high productivity. Self-control is like a muscle—to build it up you need to exercise it. Practice flex-

ing your self-control muscle by breaking the following bad habits:

1. Using your phone, tablet, or computer in bed. This is a big one that most people don't even realize harms their sleep and productivity. Short-wavelength blue light plays an important role in your mood, energy level, and sleep quality. In the morning, sunlight contains high concentrations of this blue light. When your eyes are exposed to it directly, the blue light halts production of the sleep-inducing hormone melatonin and makes you feel more alert. In the afternoon, the sun's rays lose their blue light, which allows your body to produce melatonin and start making you sleepy. By the evening, your brain doesn't expect any blue light exposure and is very sensitive to it. Most of our favorite evening devices—laptops, tablets, and mobile phones—emit short-wavelength blue light brightly and right in your face. This exposure impairs melatonin production and interferes with your ability to fall asleep as well as with the quality of your sleep once you do

nod off. As we've all experienced, a poor night's sleep has disastrous effects. The best thing you can do is to avoid these devices after dinner (television is OK for most people as long as they sit far enough away from the set).

**2. Impulsively surfing the Internet.** It takes you 15 consecutive minutes of focus before you can fully engage in a task. Once you do, you fall into a euphoric state of increased productivity called flow. Research shows that people in a flow state are five times more productive than they otherwise would be. When you click out of your work because you get an itch to check the news, Facebook, a sport's score, or what have you, this pulls you out of flow. This means you have to go through another 15 minutes of continuous focus to reenter the flow state. Click in and out of your work enough times, and you can go through an entire day without experiencing flow.

**3. Checking your phone during a conversation.** Nothing turns people off like a mid-conversation text message or even a quick glance at your phone. When you commit to a conversation, focus all your energy on the conversation. You will find that conversations are more enjoyable and effective when you immerse yourself in them.

**4. Using multiple notifications.** Multiple notifications are a productivity nightmare. Studies have shown that hopping on your phone and e-mail every time they ping for your attention causes your productivity to plummet. Getting notified every time a message drops onto your phone or

an e-mail arrives in your inbox might feel productive, but it isn't. Instead of working at the whim of your notifications, pool all your e-mails/texts and check them at designated times (e.g., respond to your e-mails every hour). This is a proven, productive way to work.

**5. Saying "yes" when you should say "no."** Research conducted at the University of California in San Francisco shows that the more difficulty that you have saying no, the more likely you are to experience stress, burnout, and even depression, all of which erode self-control. Saying no is indeed a major self-control challenge for many people. "No" is a powerful word that you should not be afraid to wield. When it's time to say no, emotionally intelligent people avoid phrases like "I don't think I can" or "I'm not certain." Saying no to a new commitment honors your existing commitments and gives you the opportunity to successfully fulfill them. Just remind yourself that saying no is an act of self-control now that will increase your future self-control by preventing the negative effects of over commitment.

**6. Thinking about toxic people.** There are always going to be toxic people who have a way of getting under your skin and staying there. Each time you find yourself thinking about a coworker or person who makes your blood boil, practice being grateful for someone else in your life instead. There are plenty of people out there who deserve your attention, and the last thing you want to do is think about the people who don't matter when there are people who do.

**7. Multitasking during meetings.** You should never give anything half of your attention, especially meetings. If a meeting isn't worth your full attention, then you shouldn't be attending it in the first place; and if the meeting is worth your full attention, then you need to get everything you can out of it. Multitasking during meetings hurts you by creating the impression that you believe you are more important than everyone else.

**8. Gossiping.** Gossips derive pleasure from other people's misfortunes. It might be fun to peer into somebody else's personal or professional faux pas at first, but over time, it gets tiring, makes you feel gross, and hurts other people. There are too many positives out there and too much to learn from interesting people to waste your time talking about the misfortune of others.

**"Great minds discuss ideas, average ones discuss events, and small minds discuss people."** – Eleanor Roosevelt

**9. Waiting to act until you know you'll succeed.** Most writers spend countless hours brainstorming their characters and plots, and they even write page after page that they know they'll never include in the books. They do this because they know that ideas need time to develop. We tend to freeze up when it's time to get started because we know that our ideas aren't perfect and that

what we produce might not be any good. But how can you ever produce something great if you don't get started and give your ideas time to evolve? Author Jodi Picoult summarized the importance of avoiding perfectionism perfectly: "You can edit a bad page, but you can't edit a blank page."

**10. Comparing yourself to other people.** When your sense of pleasure and satisfaction are derived from comparing yourself to others, you are no longer the master of your own happiness. When you feel good about something that you've done, don't allow anyone's opinions or accomplishments take that away from you. While it's impossible to turn off your reactions to what others think of you, you don't have to compare yourself to others, and you can always take people's opinions with a grain of salt. That way, no matter what other people are thinking or doing, your self-worth comes from within. Regardless of what people think of you at any particular moment, one thing is certain—you're never as good or bad as they say you are.

### Bringing It All Together

By practicing self-control to break these bad habits, you can simultaneously strengthen your self-control muscle and abolish nasty habits that have the power to bring your career to a grinding halt.



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