A TECHNICAL REPORT ON

STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

HELD AT

GERIN FM ILORIN

G.R.A, ABDULSALAM PLAZA, NO 1B AHMAD PATEGI ROAD, OFF AHMADU BELLO WAY, ILORIN 240101, KWARAs STATE

BY:

IBRAHIM AYOMIDE

OLUWAREMILEKUN

MATRICNO:

ND/23/MAC/PT/0426

SUBMITTED TO

DEPARTMENT OFMASS COMMUNICATION,

INSTITUTE OF INFORMATION

COMMUNICATION TECHNOLOGY (I.1.C.T)

KWARA STATE POLYTECHNIC, P.M.B 1375 ILORIN KWARA STATE

AUGUST–NOVEMBER, 2024.

DEDICATION

This report is dedicated to Almighty GOD for making everything easy for me Throughout my Student Industrial Work Experience Scheme (SIWES) programme and to My parent **Mr & Mrs Ibrahim** for their contribution to the success of this project. May Almighty God give you long life and prosperity (Amen)

ACKNOWLEDGEMENT

All praise, glory, honour and adoration to Almighty GOD, the author and the giver Of wisdom, knowledge and understanding for the success of this programme.

I appreciate my parents which are my source to this world **Mr &Mrs Ibrahim** for their parental and spiritual support because without their maximum understanding and support, this experience would have not come into existence including my brother and Sister for their support.

PREFACE

The Student Industrial Work Experience Scheme (SIWES) is a National Diploma Curriculum of the Department of Mass Communication, Kwara State Polytechnic llorin. The programme was established by the Industrial Training Fund (|TF) in 1973 to 1974.

It is designed to acquire the student with life situation in industries as well as Supplies in a more practical manner and their knowledge in practical activities and other Practical field during their course of study.

CHAPTER ONE

INTRODUCTION

1. ABOUT SIWES

SIWES stands for acronym for Student Industrial Work Experience Scheme.

The Student Industrial Work-Experience Scheme (SIWES) is a planned and supervised training Intervention based on stated and specific learning and career objectives, and geared towards developing the occupational competencies of the participants. It is a programme required to be undertaken by all students of tertiary institutions in Nigeria pursuing courses in "specialized engineering, technical, business, applied sciences and applied arts. The federal government on 8" October 1971 established the industrial training (ITE) in order to acquaint the students on the industrial work method. The SIWES which is a subsidiary formed in 1973 was initiated to improve the students' technical abilities to expose them to industrial culture thereby getting the acquainted with the role to play towards the technological advancement of the nation. It creates an avenue on environment in which the students are being exposed to areas of their various disciplines which enhances their mental and creative minds in the aspects of technology and development. It create easy an avenue on environment in which the students are being exposed to areas of their various disciplines which enhances their mental and creative minds in the aspects of technology and development. It is therefore a practical aspect of the academic work, which students may not be opportune to carryout throughout their stay in the higher institution.

IMPORTANCE AND OBJECTIVES OF SIWES

The Students Industrial Work Experience Scheme (SIWES) is the accepted skills training programme, which forms part of the approved minimum academic standards in the various degree programmes for all the Nigerian universities. It is an effort to bridge the gap existing between theory and practice of engineering and technology, science, agriculture, medial, management and other professional educational programmes in the Nigerian tertiary institutions. It is aimed at exposing students to machines and equipment, professional work methods and ways of safe- guarding the work area s and workers in industries and other organization.

OBJECTIVES OF SIWES

Specifically, the objectives of the students' industrial work experience scheme are to

i. Prepare students for the work situation they are likely to meet after graduation.

ii. Provide an avenue for students in the Nigerian Universities to acquire industrial skills and experience in their course of study.

iii. Make the transition from the university to the world of work easier, and thus enhance students

iv. Contacts for later job placements;

Enlist and strengthen employers involvement in the entire educational process of preparing university graduates for employment in industry.

v. Provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between university work and actual practices:

And Expose students to work methods and techniques in handling equipment and Machinery that may not be available in the universities.

IMPORTANCE OF SIWES

i.) It provides students with an opportunity to apply their theoretical knowledge in real life situations.

ii.) It exposes students to more practical work methods and techniques.

iii.) It strengthens links between the employers, universities and industrial training fund (ITF)

iv). It also prepares the students for the labour market after graduation.

CHAPTER TWO

2.0 ABOUT COMPANY

The idea of establishing a radio station (GERIN fm 95.5) came from the concern and passion of some Ilorin patriots for the development of the Emirate Community. Ilorin, being the headquarters of both the Ilorin Emirate and Kwara State; has grown from a pre-colonial town into an expanding metropolis. This growth, though desirable; has equally brought challenges that threatened the cultural heritage of the Ilorin Emirate. Besides, the growth is also opening up tremendous opportunities in all spheres of lives. This must be equally harnessed for our teeming youths.

Though, these challenges and opportunities are being addressed in other spheres but there is none through the radio broadcasting. Given the acknowledged positive role of radio broadcasting in development process, the Chief Promoter, Barrister Mahmud Abdulraheem convened a meeting where the persons behind the idea of the station concluded to pursue the community radio license opportunity provided by the National Broadcasting Commission (NBC).

OUR OBJECTIVES

GERIN fm 95.5 was conceived as a community broadcasting station to serve as a rallying point for the people of the Ilorin Emirate and environs. Specifically, the Station will provide leadership in articulating the development NEEDS of the people; moderates their WANTS while vigorously promoting the consensus of the community on issues. It is also to serve the Ilorin Emirate community in providing timely, national and international news and information that are considered relevant to the community. The station shall identify and transmit local music and other music and entertainment materials in line with the cultural values of the people of the Ilorin residents.

The foregoing are listed below as specific objectives:

- To promote the Ilorin language and culture towards retaining our cultural heritage in the context of contemporary society.
- To disseminate information and analysis of issues and events that is of local, national and international importance.
- To generate revenue, in line with the NBC guidelines on community broadcasting; through the sale of air-time and to promote other commercial activities like product exhibitions, shows, events and joint promotion of products and social activities.
- To install and maintain equipment for gathering, processing and transmission of information on radio
- To mobilize the community for development aspirations and defend their interest as appropriate
- To facilitate the achievement of these objectives through relevant support services
- To facilitate the building of economic community that is line with modern ICT requirement
- To use the facility of the station to promote educational aspiration of the community through educational broadcasting approach.

CHAPTERTHREE

3.0 JOBS DONE/ EXPERIENCEGAINED

On my first day at the radio station, I was first given a rundown of the studio safety rules and regulations. I took time to peruse through, and understand. This safety rules, I was also introduced to the management and various departments in the company, after which I was shown some transmission and broadcasting machines.

SAFETY RULES AND REGULATIONS

General Safety Rules When using the studios for broadcast or production. Health & Safety

- REPORT ANY INJURIES TO THE TEACHER IMMEDIATELY!
- Learn the location of the nearest fire extinguisher
- NEVER MOVE ANYTHING HEAVY BY YOURSELF. Some of the equipment in the station is very large and heavy. Avoid back strain or other bodily harm by working with a partner.
- NEVER MOVE ANYTHING IFYOU HAVE PREVIOUS INJURIES. If you have preexisting back injuries, other physical injuries, or health issues that may be aggravated by moving an object, notify the Radio Operations Manager and/or your teacher, and do not move anything.
- Keep all food and drink out of all studios and the radio office area.
- Keep all exits free of obstruction and keep belongings in designated areas.
- Turn off (or airplane mode) all cell phones and other electronic communication devices before entering any radio broadcast or production studio.
- Never enter a studio above which the "on air" light is illuminated. This studio is meant to accommodate 3 talent on mic. The studio doors must always be closed when broadcasting.

BROADCASTING

Broadcasting, Radio and Television, primary means by which information and entertainment are delivered to the public in virtually every nation around the world. The term broadcasting refers to the airborne transmission of electromagnetic audio signals (radio) or audiovisual signals (television) that are readily accessible to a wide population via standard receivers.

Broadcasting is a crucial instrument of modern social and political organization. At its peak of influence in themid-20th century, national leaders often used radio and television broadcasting to address entire countries. Because of its capacity to reach large numbers of people, broadcasting has been regulated since it was recognized as a significant means of communication. (For more information, see the section "The Regulation of Broadcasting.")

Beginning in the early 1980s, new technologies-such as cable television and videocassette players-began eroding the dominance of broadcasting in mass communications, splitting its audiences into smaller, culturally distinct segments. Previously a synonym for radio and

television, broadcasting has become one of several delivery systems that feed content to newer media.

The Emergence of Broadcast Communication

Throughout history, long-distance communication had depended entirely upon conventional means of transportation. A message could be moved aboard a ship, on horseback, by pigeon, or in the memory of a human courier, but in all cases it had to be conveyed as a mass through space like any other material commodity.

Radio

Radio is the radiation (wireless transmission) of electromagnetic energy through space. The biggest use of radio waves is to carry information, such as sound, by systematically changing (modulating) some property of the radiated waves, such as their amplitude, frequency, phase, or pulse width. When radio waves strike an electrical conductor, the oscillating fields induce an alternating current in the conductor. The information in the waves can be extracted and transformed back into its original form. Radio systems need a transmitter to modulate (change) some property of the energy produced to impress a signal on it, for example using amplitude modulation or angle modulation (which can be frequency modulation or phase modulation).

Systems also need an antenna to convert electric currents into radio waves, and vice versa, An antenna can be used for both transmitting and receiving. The electrical resonance of tuned circuits in radios allows individual stations to be selected. The electromagnetic wave is intercepted by a tuned receiving antenna. A radio receiver receives its input from an antenna and converts it into a form usable for the consumer, such as sound, pictures, digital data, measurement values, navigational positions, etc. Radio frequencies occupy the range from a 3 kHz to 300 GHZ, although commercially important uses of radio use only a small part of this spectrum.

A radio communication system sends signals by radio. The radio equipment involved in communication systems includes a transmitter and a receiver, each having an antenna an appropriate terminal equipment such as a microphone at the transmitter and a loudspeaker at the receiver in the case of a voice-communication system.

Processes

Radio communication. Information such as sound is converted by a transducer such as a microphone to an electrical signal, which modulates a radio wave sent from a transmitter. A receiver intercepts the radio wave and extracts the information-bearing electronic signal, which is converted back using another transducer such as a speaker. Radio systems used for communication have the following elements. With more than 100 years of development, each process is implemented by a wide range of methods, specialized for different communications purposes.

Transmitter and modulation

Each system contains a transmitter; this consists of a source of electrical energy, producing alternating current of a desired frequency of oscillation. The transmitter contains a system to modulate (change) some property of the energy produced to impress a signal on it. This modulation might be as simple as turning the energy on and off, or altering more subtle properties such as amplitude, frequency, phase, or combinations of these properties. The

transmitter sends the modulated electrical energy to a tuned resonant antenna; this structure converts the rapidly changing alternating current into an electromagnetic wave that can move through free space (sometimes with a particular polarization).

An audio signal(top)maybe carried by an AM or FM radio wave.

Amplitude modulation of a carrier wave works by varying the strength of the transmitted signal in proportion to the information being sent. For example, changes in the signal strength can be used to reflect the sounds to be reproduced by a speaker, or to specify the light intensity of television DiXels. It was the method used for the first audio radio transmissions, and remains in use today, "AM" is often used to refer to the medium wave broadcast band (see AM radio), but it is used in various radiotelephone services such as the Citizen Band, amateur radio and especially in aviation. due to its ability to be received under very weakly signal conditions and its immunity to capture effect, allowing more than one signal to be heard simultaneously.

Frequency modulation varies the frequency of the carrier, The instrument frequency of the carrier is directly proportional to the instantaneous value of the input signal, FM has the "capture effect" whereby a receiver only receives the strongest signal, even when others are present. Digital data can be sent by shifting the carrier's frequency among a set of discrete values, a technique known as frequency-shift keying. FM is commonly used at Very high frequency (VHF) radio frequencies for high-fidelity broadcasts of music and speech (see FM broadcasting).Analog TV sound is also broadcast using FM.

Angle modulation alters the instantaneous phase of the carrier wave to transmit a signal. It may be either FM or phase modulation (PM).

Antenna.

Roof top television antennas. Yagi-Uda antennas like these six are widely used at VHF and UHF Frequencies. An antenna (or aerial) is an electrical device which converts electric currents into radio waves, and Vice versa. It is usually used with a radio transmitter or radio receiver. In transmission, a radio transmitter supplies an electric current oscillating at radio frequency (i.e. high frequency AC) to the antenna's terminals, and the antenna radiates the energy from the current as electromagnetic waves (radio waves). In reception, an antenna intercepts some of the power of an electromagnetic wave in order to produce a tiny voltage at its terminals, that is applied to a receiver to be amplified. Some antennas can be used for both transmitting and receiving, even simultaneously, depending on the connected equipment.

Propagation

Once generated, electromagnetic waves travel through space either directly, or have their path altered by reflection, refraction or diffraction. The intensity of the waves diminishes due to geometric dispersion (the inverse-square law); some energy may also be absorbed by the intervening medium in some cases. Noise will generally alter the desired signal: this electromagnetic interference comes from natural sources, as well as from artificial sources such as other transmitters and accidental radiators. Noise is also produced at every step due to the inherent properties of the devices used. If the magnitude of the noise is large enough, the desired signal will no longer be discernible; the signal-to-noise ratio is the fundamental limit to the range of radio communications.

Resonance

Electrical resonance of tuned circuits in radios allow individual stations to be selected. A resonant, circuit will respond strongly to a particular frequency, and much less so to differing frequencies.

This allows the radio receiver to discriminate between multiple signals differing in frequency. Receiver and demodulation A crystal receiver, consisting of an antenna, adjustable electromagnetic coil, crystal rectifier, capacitor, headphones and ground connection.

The electromagnetic wave is intercepted by a tuned receiving antenna; this structure captures some of the energy of the wave and returns it to the form of oscillating electrical currents. At the receiver, these currents are demodulated, which is conversion to a usable signal form by a detector sub- system. The receiver is "tuned" to respond preferentially to the desired signals, and reject undesired signals.

Early radio systems relied entirely on the energy collected by an antenna to produce signals for the operator. Radio became more useful after the invention of electronic devices such as the vacuum tube and later the transistor, which made it possible to amplify weak signals. Today radio systems are used for applications from walkie-talkie children's toys to the control of space vehicles, as well as for broadcasting, and many other applications.

A radio receiver receives its input from an antenna, uses electronic filters to separate a wanted radio signal from all other signals picked up by this antenna, amplifies it to a level suitable for further processing, and finally converts through demodulation and decoding the signal into a form usable for the consumer, such as sound, pictures, digital data, measurement values, navigational positions, etc.

Radio band

Light comparison		
Name	Frequency	
Gammaray	>30EHz(0.01nm)	124keV-300+GeV
X-Ray	30EHz -30PHz(0.01nm-10nm)	124eVto120keV
Ultraviolet	30PHz-750THz(10nm-400nm)	3.1eVto124eV
Visible	750THz -428.5THz(400nm-700nm)	1.7eV -3.1eV
Infrared	428.5THz -300GHz(700nm-1mm)	1.24meV-1.7eV
Microwave	300GHz -300MHz(lmm-lm)	1.24ueV-1.24meV
Radio	300MHz -3kHz(1m-100km)	12.4feV-1.24meV

Radio frequencies occupy the range from a 3kHzto 300GHZ, although commercially important uses of radio use only a small part of this spectrum. Other types of electromagnetic radiation, with frequencies above the RF range, are infrared, visible light, ultraviolet, X-rays and gamma rays.

Since the energy of an individual photon of radio frequency is too low to remove an electron from an atom, radio waves are classified as non-ionizing radiation.

Communication systems

A radio communication system sends signals by radio. Types of radio communication systems deployed depend on technology, standards, regulations, radio spectrum allocation, user requirements, service positioning, and investment.

The radio equipment involved in communication systems includes a transmitter and a receiver, each having an antenna and appropriate terminal equipment such as a microphone at the transmitter and a loudspeaker at the receiver in the case of a voice-communication system.

The power consumed in a transmitting station varies depending on the distance of communication and the transmission conditions. The power received at the receiving station is usually only a tiny fraction of the transmitter's output, since communication depends on receiving the information, not the energy, which was transmitted.

Classical radio communications systems use frequency-division multiplexing (FDM) as a strategy to split up and share the available radio-frequency bandwidth for use by different parties communications concurrently.

Coverage

There are several factors influencing the coverage area:

- Location of the transmitter in relation to the desired coverage area
- Type and pattern' of the transmitting aerial
- Height of the transmitting aerial
- Power of the transmitter(and this is regulated in most countries)
- Terrain(how hilly is the area to be covered).

Transmitters

Transmitters are available with powers of a few Watts to several thousand Watts. A 50W transmitter may cover a small village or town (if the aerial is high enough), whereas to cover a large city may require 5kW.

- When selecting a transmitter the following parameters should be considered:

  Efficiency(thereisnopointpayingforpowerwhichdoesnotgointotheaerial)

- Robustness(amodulardesignmakessense-asinglefailurewillnotrenderthewhole unit inoperative)

- Remote control and diagnostics (often transmitters are sited in remote locations, difficult to get to)

In addition to the transmitter itself, several other components are required. An FM Processor is used to make your station sound 'louder than its competitors, RDS allows data to be transmitted and displayed on suitably equipped receivers, a cavity filter reduces spurious missions(and may be a regulatory requirement). Aerials need to be chosen carefully to ensure optimum coverage, connected with suitable 'feeder ‘cable to avoid losses. More sophisticated systems will have back up transmitters with varying levels of change-over system. Dummy loads allow the transmitter to be tested independently of the aerial and feeder cable.

In situations where the transmitter is not located at the studio site, a Studio to Transmitter Link (STL) is required to get the signal from the studio to the transmitter.

CHAPTERFOUR

4.0 PROBLEMS ENCOUNTERED AND POSSIBLE SOLUTIONS

i. Difficulty in finding a place for industrial training is a big problem for students on the SIWES program. There are situations whereby you will write a company's aptitude test, but because you do not know anybody within the company or that no one can speak on your behalf then you lose the placement.

ii. Nigerian government in collaboration with SIWES should help students when it comes securing a place for the training; or provide a policy that gives a Nigerian student right to be taken in any company he/she applied for the training. By so doing, the time wasted home while searching for a place by the student will be minimized.

iii. Each organization with their lapses, I enjoyed my training program at the Nigerian Tribune Newspaper, Ibadan, and it is really a superb experience. Some of the challenges I encountered during the course of the program is that they is that the library needs more librarians, so the services will be faster, more efficient and also the library needs an effective binding machine. Also the library needs more shelves so that the information materials will be arranged orderly and serially, the library newspaper collection needs more spaces because the volume is larger than the space, so the library needs shelves for spacious arrangement. Also the library needs more technological facilities e.g Computer and Air-Conditioner, Photocopier machine e.t.c.

iv. The library also needs more stable electric supply for bright reading.

4.3 RECOMMENDATIONS

I recommend that the library should employ more professional staff to carry out the services more efficiently. And also the library should endeavor to make provisions for more shelves so the materials could be arranged orderly and serially. I also recommend that the library purchase more technological facilities and a stable electric supply. I also recommend that SIWES should provide places for industrial attachment for student and the Industrial Training Fund [I.T.F.] should pay some allowances to the students.

REFERENCES

The https://gerinfm.com.ng/about/ (2024). The day-to-day experience gained from the period: 4th Aug- 25th November, 2024.

contact@gerinfm.com.ng). Home of the Nigerian Tribune: Vol.1 no.1 Journo Gyan (2017). Structure & Functions of Various Department of Newspaper Organization: February 25th, 2017.