A TECHNICAL REPORT ON THE STUDENT INDUSTRIAL WORK
EXPERIENCE SCHEME (SIWES)
HELD AT
KWARA STATE POLYTECHNIC (I.O.T) ILORIN KWARA STATE
PRESENTED BY OLASUPO FARUQ
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SUBMITTED TO
THE DEPARTMENT OF MECHANICAL ENGINEERING INSTITUTE OF TECHNOLOGY KWARA STATE POLYTECHNIC P.M.B 1375 ILORIN
NIGERIA
IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF NATIONAL DIPLOMA (ND) IN MECHANICAL ENGINEERING DEPARTMENT KWARA STATE, POLYTECHNIC ILORIN, NIGERIA
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PREFACE

The student industrial work experience scheme (SiWES) was introduced by the national board of technical education (NBE) in 1976, it was established mainly to educate and give student exposure in the practical aspect. The body named industrial training fund (ITF) was established to monitor the performance of the students and payment of training allowances.

DEDICATION

I dedicate this technical report to my beloved family and friends and to all seekers of knowledge, whose most cherished goal in life is to employ their learning to serve their Creator.

ACKNOWLEDGEMENT

I thank Almighty Allah for making it possible for me to complete my student industrial work experience scheme successfully.
My gratitude goes to my parents for their responsibilities from my childhood till today and also for their financial and moral support during my training
I also appreciate my supervisors, H.O.D and all the people who have contributed to the successful completion of my siwes program. May God bless you all.

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CHAPTER ONE

1.0

INTRODUCTION TO SIWES

The student industrial work experience scheme (SIWES) can be defined as a technical skill and acquisition of knowledge from the organization, industrial sector. It also serves as a motive that compliments the learning which student have acquired in the classroom or theoretically.

The student industrial work experience scheme is in practical fulfillment of TCS 210 of becoming

a competent student in the field. It is a major work which is to expose student to the practical aspect of what they are been thought in class. During the course of study, I was posted to the programs department of the establishment.

1.1

BACKGROUND OF SIWES

The student industrial work experience scheme (SIWES) was established by ITF in 1973 to solve the problem of lack of adequate practical skill preparatory for employment in various industries by Nigerian graduates of tertiary institution.

The purpose of the scheme is to expose student to different kinds of industrial based skills necessary for a smooth transition from classroom to the world of labor. It afford the student of tertiary institution the

opportunity of being engaged; familiarized and expose to the needed experience in handling various kinds of equipment and machine which are usually not available in the educational environment or institution.

However, participation in siwes has becomes a necessary pre-condition for the award of diploma

in most institution of higher learning in the country, in accordance with the education policy of the government.

1.2

OBJECTIVES OF SIWES

The objectives of the student industrial work experience scheme (SIWES) as a follow:

1. It improves student's knowledge about the industrial sector or organization.
2. It enable the student to practicalised different test form what they have learnt theoretical in the

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classroom.

It relates the student to the labor market and how it's being operated.

4. It also enlighten student to various division of industries or organization of work in which their course of study can be practicalised.
5. Ii enable student to know more the technological innovation in course of study, and some equipment which are or involved.
6. It enable student to know the practical aspect of chosen field of study

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CHAPTER TWO

2.0 Description of the establishment of attachment

Kwara State Polytechnic was established in 1973 in order to expand the academic frontiers of the state.

The Kwara State Polytechnic has been in operation since 1973 with focus on technological and entrepreneurial skills. Located in Ilorin, the capital of Kwara State, Kwara State Polytechnic started with 110 pioneering students and it offers National Diploma and Higher National Diploma in courses at undergraduate levels

2.1: Location and brief history of establishment

Kwara State Polytechnicis a Nigerian tertiary institution that was established in 1973 by the then Military Governor of Kwara State Col. David Bamigboye after the decision to establish a polytechnic in Kwara State was announced in 1971.It is located in Ilorin, the capital of Kwara State.

2.2: Objectives of establishment

To teach, impart and foster the highest level of intellectual development and provide services to humanity through the exploration of available scientific and research methods.

2.3: Organization Chart

Head Of Department

Production, Plant &

Power Unit

Welding And Fabrications

And Laboratories

Automotive, Autotronics And Industrial Units

Lecturers,

Instructors & Technologists
Lecturers,
Instructors & Technologists
Lecturers, Instructors &
Technologists
Clerical Staff
Technical Staff
Administrative Staff
Secretariat Staff
Students (ND/HND)
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2.4: The various units in the establishment and their functions

1. Production workshop
2. Welding and fabrication workshop
3. Automotive workshop

2.4.1 Production Workshop

A production workshop is where metal removing operations takes place. This metal removing operations is used to produce different sizes and shapes, and to produce accurate and uniforn engineering parts which are assembled into different types of machines such as automobiles, aircraft etc.

Safety precautions in production workshop

1. Always seek permission from the workshop supervisor before operating any machine
2. Avoid loose clothing while operating machine so as to avoid being caught by moving part of the machine
3. Always put on your overall, strong leather boots and eye goggle while operating the machine.
4. Avoid horse play or excessive charting while operating the machine
5. Do not use your hand to stop a moving part of a machine

Some of the machines present in the production workshop

- Lathe machine
- Drilling machine
- Grinding machine

2.4.2 Welding and fabrication workshop

A welding and fabrication workshop is a section where welding operations takes place, the joining of metals together. It also includes the cutting and grinding operations.

Safety precautions in welding and fabrication workshop

1. Safety goggle must be worn when welding and grinding

2. Always use the right tool for the right job

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1. Tight work piece firmly on bench vice before performing any operation
2. Always wear safety leather boots.
3. Safety gloves must be worn before performing any operation.

Some of the machines present in welding and fabrication workshop

- Arc welding machine
- Grinding machine
- Bending machine

2.4.3 Automobile workshop

An automobile workshop is where automobiles are repaired by auto mechanics and technicians.

Safety precautions in automobile workshop

- Keep work areas clean and organized*
- Never wear loose clothing or clothing that is ripped or torn,
- Never work underneath a vehicle unless it has been properly supported.
- Always remove the keys from the ignition switch
- Never place hands, tools, or other objects near the engine while it is running.

Some of the machines present in automobile workshop

- Jack
- Battery charger

Air compressor

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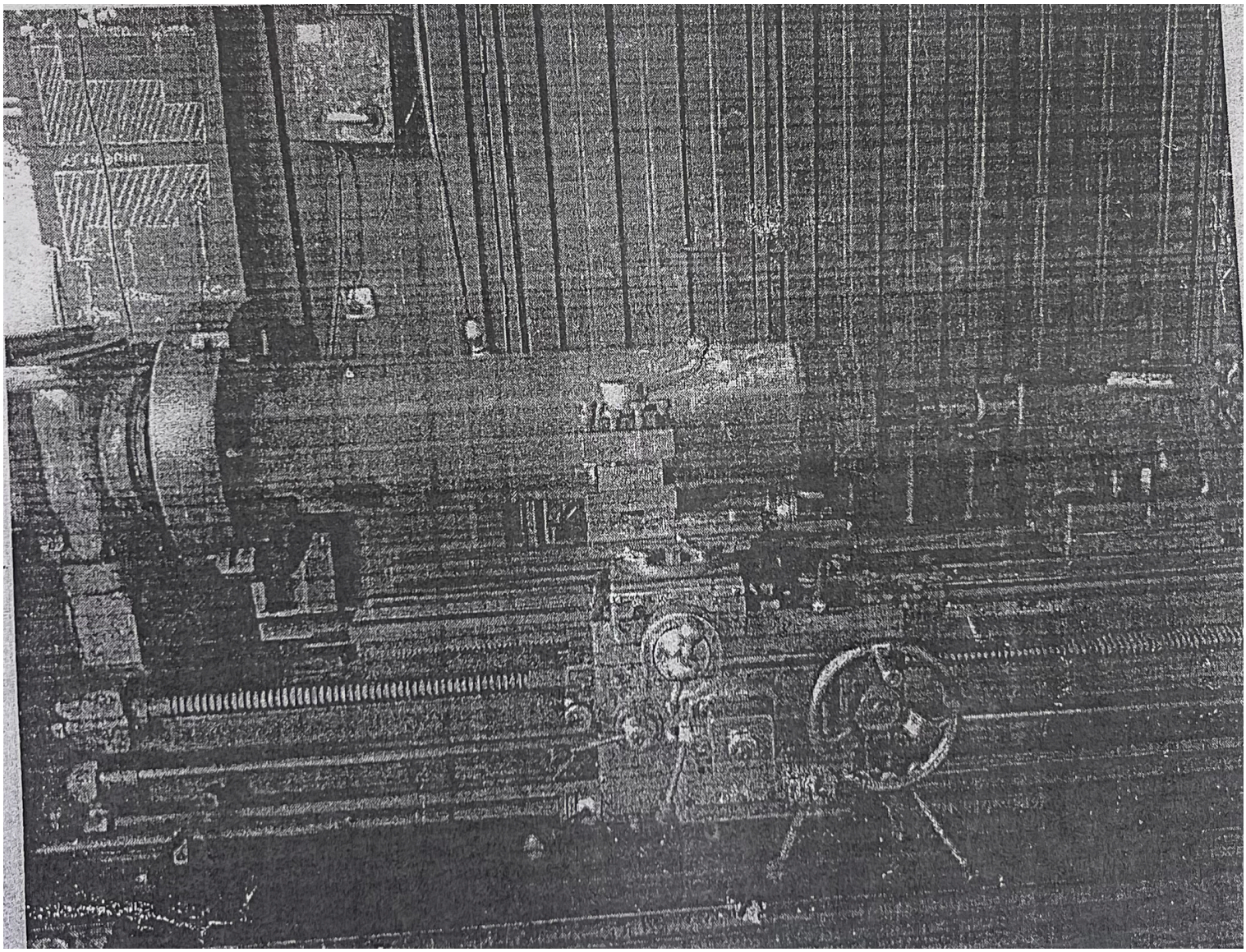
CHAPTER THREE

3.0 Some activities carried out during the siwes program and my involvements at the various workshops. Production workshop, weldigg and fabrication workshop and automobile workshop. Cleaning and maintenance of the workshops, it is important for every engueer to know how to take care of the machines and also the maintenance of various machines in the workshops.

• Diagram of a lathe machine



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3.1 Production workshop Activities

3.1.1 Turning operation on a lathe machine

- Different set of tools such as turning tools, vernier caliper were gathered
- Then the workpiece was fixed into the three jaw chuck
- After that the lathe machine was set to the correct speed because of type and size of the material
- Then the gearbox was adjusted to get the depth of cut
- Later the tool holder was moved to the left hand side and the toolbit was set to the right height
- Then tool post was tightened to prevent the tool holder from moving during the machining operation
- Later the workpiece was measured with vernier caliper and the tool bit was adjusted

again, to get the proper depth of cut from 25mm to 16mm.

3.1.2 Facing operation on a lathe machine

- Different tools such as facing tool, vernier caliper were gathered
- Then theworkpiecewas fixed into three jaw chuck
- Later the lathe machine was set to the correct speed because of the diameter and type of material being cut
- Then the lathe machine was started and the tool bit was brought close to the lathe

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center as possible

- Later the carriage was moved to the left by using the hand wheel

After that the cutting tool bit was feed inwards to the center by turning the cross feed handle

- Later the workpiece was measured with veritier caliper to get the correct length

CHAPTER FOUR

4.0 Welding workshop

Diagram of an arc welding machine

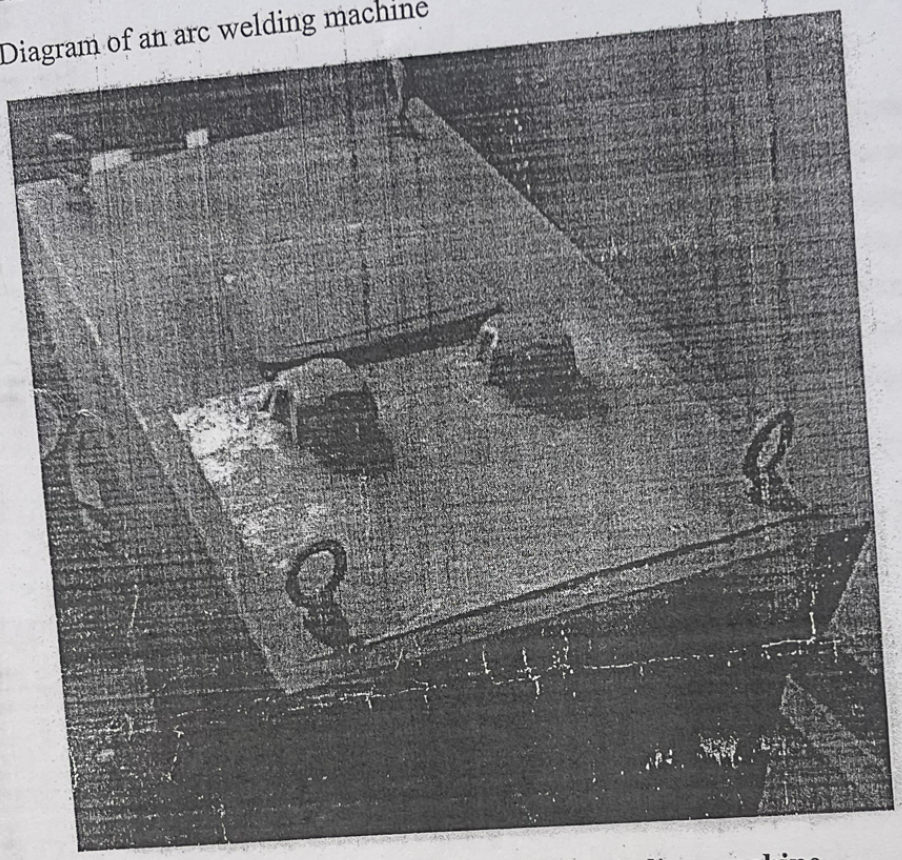
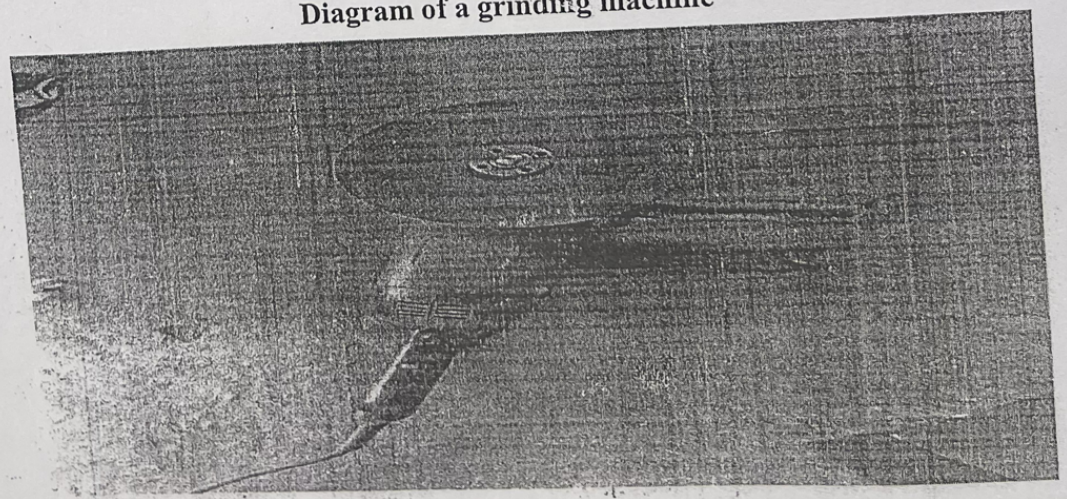


Diagram of a grinding machine



4.0.1 Making of Coal pot

- The materials and tools such as sheet metal, tape rule, chisel and hammer were gathered
  Then the sheet metal was measured with tape rule
- Later the sheet was cut into their appropriate sizes
  After that the sheet metal was folded
- Then thefolded sheet metal was joined with an arc welding machine
  Later the handles were welded to the coal pot.

4.1 Automobile Workshop Activities

4.1.1 Changing of car timing belt

- Getting the correct replacement of timing belt
- The battery was disconnected to avoid any fatal electrical shocks
- Then the alternator belt was removed
- Later other accessories like power steering pump and air conditioning compressor was also removed.
- The timing lines were aligned
- The screw and bolts that are holding the timing was also removed
- The alignment was checked to ensure that the camshaft and crankshaft are aligned properly

: • Later the new timing belt was placed

• Then the parts were reassembled into the car.

4.1.2 Changing of Fuel pump

- The fuse panel and relay was located to check if the fault is from there
- Then the back seat was removed
- Later the electrical connectors off the fuel pump were took off
- After that the screwdriver was used to release the clips that are holding the fuel support.
  Then the fuel pump was removed from the housing
- Then the new fuel pump was fixed into the housing and fuel tank
- Later the back seat was fixed back into the car.

CHAPTER FIVE

5.0 SUMMARY

My four months Siwes training at Kwara State Polytechnic Ilorin, has been one of the most interesting, productive and instructive experience of my life. Through this training ! have gained new insight and comprehensive understanding about the real industrial working and knowledge. functional skills, it has also improved my theoretical and practical

5.1 PROBLEM ENCOUNTERED DURING THE PROGRAM

The challenges I confronted at the workplace were mainly centered on poor interpersonal relationship between the other siwes students. This was put in check via the intervention of our supervisor through discussion and meeting. Tv

There was also a time when the number of sies students at the workshop was small and this resulted to some students being overworked

5.2 CONCLUSION

My Siwes experience has indeed served its purpose as the initial idea of siwesprogramme was to not only expose the student's real life work environment but to also enable students to educate ourselves about work: ethics, mannerism and how to conduct ourselves in the work environment.

5.3 RECOMMENDATION

I recommend that the cordinators should always visit students at their place of attachments regularly. So that to ensure they are attached to organizations related to their field of study.