

# Impediments to Students' Industrial Training in Electrical/Electronics Technology

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**Abstract:** Getting a job is not at all easy in today's scenario. Employers of labour are expecting more from their employees. Many graduates especially Electrical/Electronics graduates are left unemployed today because of lack of industrial work exposure. Thus, students' industrial training bridges the gap and helps to convert students to qualified employees by providing practical work experience. The major objective of this paper is to identify the impediments to students' industrial training in Electrical/Electronic Technology. The paper explained concepts such as impediments, students' industrial training, and Electrical/Electronics Technology. The impediments to students' industrial training in Electrical/Electronics Technology are lack of fund, guidance and support during the internship programme, lack of industries to carry out their training program, lack of enabling environment and lack of commitment and sincerity in the execution of industrial training programme. The paper suggested that, enough industries, enabling environment, guidance, support services and fund should be provide by I.T.F, government and other relevant agencies to ensure students undergo their students' industrial training programme successfully, among others.

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## I. INTRODUCTION

Impediments can be defined as any hindrance or obstacles which tend to interfere with the proper way of carrying out a particular activity. He further stated that impediments are those constraints or problems which usually get in the way of achieving a particular objective (Ugwuanyi and Ezema, 2010). Gashaw (2019) also defined impediment as anything that slows, hinders or blocks the progress of a particular training, situation and event. It can be any physical or technological situations or phenomenon which inhibits progress in a given field. In the context of this paper, impediment in electrical/electronics is any hindrance or obstruction which is a stumbling block to students of electrical/electronics from participating successfully in industrial training programme. Gashaw (2019) stated that, these impediments are barriers or stumbling blocks to the acquisition of practical skills by electrical/electronics students through students' industrial training and it can be an object, thing, action or situation that causes the obstruction of Electrical/Electronics students from their engagement in industrial training.

Industrial training (I.T) refers to the practical training in a company or an industrial environment that helps the students in developing the required skills which will help them in

becoming a professional in the future in their chosen field of study (Gashaw, 2019). The purpose of students' industrial training is to expose students to real work of environment experience and at the same time, to gain the knowledge through hands on observation and job execution. Through industrial training, the students will also develop skills in work ethics, communication, management and others. Mostly, Students' Industrial Training is a simple training of 3 to 6 months duration depending on the category and the institution. The processes learnt in theory, are totally different from the practical processes and this is the exposure students get from an industrial internship. Some students' industrial training can also involve serious work the students involved are getting stipend from the work they did (Tambuwal, 2012).

Students' Industrial Training is also called Students' Industrial Work Experience Scheme (SIWES). SIWES is a practical skill acquisition training programme designed to expose and prepare students of technical colleges and other related schools from college environment to work environment. It is an effort to bridge the gap existing between theory and practice. The Students' Industrial Work Experience Scheme (SIWES) which was established in 1973 in Nigeria is a planned and supervised training intervention based on a stated and

specific learning and career objectives geared towards developing the occupational competencies of the participants (students). According to Akerejola (2008), SIWES is a field service department of Industrial Training Fund (ITF). The scheme is a tripartite programme involving the students, the institutions and the industries (employers of labour). Tambuwal (2012) stated that Students' Industrial Training is aimed at exposing students to machines and equipment, professional work methods and ways of safeguarding the work areas and workers in industries and other organizations. It enables the participants to develop occupational competencies so that they can readily contribute their quota to national economic and technological development after graduation (Ugwuanyi & Ezema, 2010). Specifically, the objectives of Students' Industrial Training are to: (a) Prepare students for work situation they are likely to meet after graduation. (b) Provide an avenue for students in the schools to acquire industrial skills and experience in their course of study. (c) Make the transition from the school to the world of work easier, and thus enhance students' contacts for later job placement. (d) Enlist and strengthen employers' involvement in the entire educational process of preparing graduates for employment in industry. (e) Provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between classroom work and actual practice. (f) Expose students to work methods and techniques in handling equipment and machinery that may not be available in the schools (Ugwuanyi and Ezema, 2010).

Students' Industrial Work training is a laudable skills acquisition programme which is geared towards technological development of the nation. According to Tambuwal (2012) went further to say that Students' Industrial Work training is a skills training programme which affords students the opportunity of familiarizing, acquiring and exposing themselves with the needed experience in handling industrial equipment and machinery that are not usually available in their institutions.

However, as highlighted by Tambuwal (2012), that the scheme cannot be said to have achieved the desired objectives due to many factors ranging from the structural causes of performance problem that have plagued the system to increasing number of students and institutions which place undue pressure on the few surviving industrial organizations. Tambuwal (2012) also posited that Students' Industrial Work training is faced with many constraints or impediments which includes; problems of misconception, scarcity of place of attachment, school or institution problems, irregular supervision of the relevant agencies, resource or funding problems and ineffective organization. Likewise, Seevers and Knowlton (2006) pointed out that the existing Students' Industrial Work training in Nigeria is not satisfactory as far as Electrical/Electronics Technology is concerned vis-à-vis practical skill acquisition; hence the need to re-engineer Electrical/Electronics Technology through functional school-

industry collaboration for capacity building of prospective Electrical/Electronics Technology graduates.

Electrical and Electronics Technology is all about studying and creating own devices and equipment that uses electricity, electronics and electromagnetism. It also involves testing and supervising such equipment. This discipline is one of the mostly sought-after one by the students, as it provides great job opportunities. The course involves the study about the usage and storage of power and energy, which in turn helps in making devices and equipment (Manabete, 2003). Electrical and Electronics Technology is an integrated engineering branch that states a student to practically apply electricity and electronics to invent unique devices. The concept of power generation and distribution is dealt in detail in this course. The usage of electrical systems is vital and Electrical and Electronics Technology specializes in it.

Electrical and Electronics Technology contributes to the sustainability, quality and economy of the nation by developing and maintaining various electrical, electronic and computer control systems. An Electrical and Electronics Technology graduate can look for job opportunities specifically in the fields of telecom, I.T, transportation, airspace, power etc (Manabete, 2003). The Electrical and Electronics Technology graduates can also apply for jobs in the industries that deals with product development, product design, system management, control system, sales etc. According to Hindson (2008) technology education with reference to electronics/electronics education is a branch of engineering and technology that involves the acquisition of relevant knowledge in electronic devices, parts, components and functions, to also discover and develop creative abilities, aptitudes and interest in practical skills for gainful employment in a given job or career.

As reflected in the national policy on education (F.G.N, 2013), one of the objectives of technology education is aimed at providing training and impacting the necessary skills as well as basic scientific knowledge leading to the production of technicians, craftsmen and other skilled personnel who will be enterprising and self reliant; such a skills can be best acquired through exposing her students to industrial training programme.

Students' industrial training in various careers and trades in electrical/electronics technology is considered one of the commonest strategies in which students offering the course can learn to make a living. Regrettably, there are some impediments which hinder students of Electrical/Electronics Technology from participating fully in students' industrial training programme.

## II. IMPEDIMENTS TO STUDENTS' INDUSTRIAL TRAINING IN ELECTRICAL/ELECTRONICS TECHNOLOGY

A number of impediments has been identified to be facing students of electrical/electronics technology from carrying out their industrial training. Oyeniyi (2012) stated that some of the impediments to students' industrial training are as follows:

### ➤ *Lack of Industries or firm for Students' Industrial Training Programme:*

Electrical/electronics industries are charged with the responsibility of accepting students-in-training from various institutions of learning for on-the-job training and practical skill acquisition. Theories in schools are transformed into real life practical experience in electrical/electronics industries. Ogwa (2009) stated that students' industrial work experience scheme was designed to add more impetus to easier acquisition of practical skills by the students. Sometimes the students are wrongly posted due to insufficient industries for their individual training and this affects the purpose of the SIWES. Students are posted to workshops without tools and equipment for practical works due to no industries for their engagement. This lack of industries in Nigeria has been attributed to the reason why students do not acquire the necessary practical skills for them to be self-reliance after school.

### ➤ *Lack of Adequate Guidance and Support to Students During the Internship:*

One of the roles of school-based supervisors of students' industrial training is to provide guidance and support services to students during the industrial training. When students are adequately guided, the objectives of the programme are always met. The role of an industrial based supervisor is to provide a guidance and support services to their students-trainees by involving them in on-the-job training, supervising them during the work activities, providing incentives and financial support to the students and as well as advising them. Regrettably, some electrical/electronics firm or industrial based supervisors shy away from this their responsibilities, instead, they see some students on industrial training as traitors and to this refuse to provide a guidance services and supports to them (Hindson, 2008). This lack of adequate guidance and support services to students is seen as one of the most threatening impediments to students' industrial training in electrical/electronics technology.

### ➤ *Lack of Enabling Environment for I.T:*

Electrical/Electronic technology students required a well designed workshop or laboratory, tools, equipment, machinery and materials to undertake a functional industrial training programme. When these things are lacking as Maria and Irene (2018) argued, the students is placed in a messy state. Buttressing this point, Raihan (2014) stressed that in this information age, students must "be kept abreast with the electronic gadgets necessary for efficient interaction. Inadequate supply of workshop facilities (and consequently the

inability of electrical/electronics students to be computer literate) and irregular electric power supply have been identified as factors that impede effective electrical/electronic technology students' industrial training (Raihan, 2014).

### ➤ *Lack of Adequate Funding:*

The industrial training fund (ITF) was established to adequately fund students' industrial training programme. Both the students, the industries and as well as Electrical/Electronics Technology need fund to adequately run the programme. It is imperative to note that none of these categories are adequately funded, instead they are under funded and as such affects the progress and objective of the students' industrial training programme (Utawale and Kediya, 2014). Perhaps the 4ms - money, materials, machines and man - which are essential for any industrialization activity, money is the most important. This is because with money one can purchase machines and materials and pay for human labour costs. On the other hand, if materials, machines and men are available, industrial activities stand halted without money. The industrial production manager cannot afford to start production without money on ground to pay for workers and as well undertake maintenance services. Writers are therefore, unanimous that Electrical/Electronics technology education has been under funded in this country (Utawale and Kediya, 2014). As a capital intensive enterprise, if citizens must acquire skills that will make them functionally employed, then Electrical/Electronics technology education must receive adequate funding.

### ➤ *Lack of Commitment and Sincerity by E/E Administrators in the Execution of Industrial Training Programme:*

It will undoubtedly be a wasted effort if formal electrical/electronic technology education, functionally given, suffers poverty alleviation due to lack of commitment and sincerity in the execution of students' industrial training programme which is requisite for poverty alleviation in the society. Oderinde (2005) listed the main weaknesses of the electrical/electronics technology in alleviating poverty through students' industrial training as follows: (a) Lack of coordination which has given rise to duplication of efforts and resources, waste, inefficiency and conflicts (b) Weak monitoring and evaluation of the programmes (c) Lack of favourable policy frame work and national strategy for poverty alleviation. (d) Non-sustainability of electrical/electronics programme poverty alleviation initiatives, and (e) Poor targeting of skill acquisition programme in electrical/electronics.

## III. CONCLUSION

Students' industrial training plays a vital role in the choices that electrical/electronics students make about future career pathways. Students' industrial training Program comes with both advantages and disadvantages. As this study centered on problems of Students' industrial training, it is found that the students are facing the problem of lack of fund, guidance and support during the internship programme, lack of industries to

carry out their training program, lack of enabling environment and lack of Commitment and Sincerity in the Execution of Industrial Training Programme. Besides these problems the students of Electrical/Electronics are also facing the problems of uncomfortable timings, unresponsive officials, too much work and other problems in their place of industrial training. All these problems are more or less solvable only. It is suggested that Electrical/Electronics institutions, the government and the industry should take necessary measures to overcome this problem in the period ahead, as outlined below:

#### ➤ Suggestions

In the light of the above identified impediments to students' industrial training in electrical/electronics technology the following suggestions are made:

- The government and other relevant individuals should establish functional industries or firm with functional Electrical/Electronics facilities and equipment for Electrical/Electronics students to actively participate in Students' Industrial Training Programme.
- Adequate guidance and support should be provided both by the school and the industry to Electrical/Electronics students before and during the training programme. Also, the students should be well guided by the industrial-based supervisor on the rules and regulations guiding the industrial training programme before they leave for the programme.
- As a tripartite programme, enough fund should be provide by I.T.F, the government and other agencies to ensure students undergo their students' industrial training programme successfully.
- An enabling environment should be created for Electrical/Electronics students to carry out their students' industrial training since Electrical/Electronic technology students requires a well designed workshop or laboratory, tools, equipment, machinery and materials to undertake functional industrial training. Also, training facilities should be provided for students to use while carrying out their industrial training.
- There should be adequate commitment and sincerity by Electrical/Electronics administrators in the proper execution of Industrial Training Programme.

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