GAP ANALYSIS ON ENTREPRENEURSHIP SKILLS NEEDED AND POSSESSED BY ELECTRICALELECTRONIC GRADUATES FOR SOLAR POWER INSTALLATION IN TECHNICAL INSTITUTIONS IN NIGER STATE.

BY

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(2016/1/63728TI)

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APRIL, 2023

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DECLARATION

I Muritala Abdul Akeem Abidemi, Matric No. 2016/1/63728TI an undergraduate of the department of industrial and technology education, certify that the work embodied in this project is original and has not been submitted in part or full for any other degree or diploma of this or any other institution

MURITALA, Abdulakeem Abidemi
2016/1/63728TI

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Signature & Date

DEDICATION

This research is dedicated to God Almighty for all his mercies and protection toward me and also to my parent Mrs. Wasilat Muritala for her love and support.

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CHAPTER FIVE

ABSTRACT

The study was to examine the gap analysis on entrepreneurship skills needed and possessed by electrical/electronic graduates for solar power installation in technician institution Niger state. Three research questions were formula to guide this study. A total of 65 respondents consisting of 45 lecturers and 20 solar power installers randomly selected were used as the population for the study. A questionnaire was developed and validated by three lecturers from industrial and technology education department. Mean and standard deviation where the satisfaction took used to analyze the data collected for the study, finding also reveals that inadequate attention to entrepreneurship skill was not given by electrical/electronic lecturer and graduates. The study found that eleven (11) entrepreneurship skills needed, eleven (11) entrepreneurship skills possessed and seven (7) strategies for improving electrical/electronic graduates on entrepreneurship skills possessed are needed by electrical/electronic graduates for solar power installation. The study also find out that there was no significant difference in mean responses of lecturers and solar power installer on the entrepreneurship skills needed and possessed by electrical/ electronic graduates for solar power installation. Base on the finances, it was recommended that all skills identified in this study should be incorporated into electrical/electronic curriculum to train the students. It was also recommended that the facilities for effective implementation of the identified skills should be provided by government and employers of electrical/electronic graduates.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Globally, science and technology are recognized as powerful instruments for national development. It is in realization of this, that Nigeria had to adjust her education system and diversified her curriculum to integrate academic knowledge with technical and vocational skills so as to empower the graduates with relevant knowledge and skills. The aim is to make them self-reliant and useful members of the society in which they live (Federal Republic of Nigeria (FRN), 2014). Education is a vital instrument for human capital development. The synergy between education and society is such that the needs of the society are reflected in the national philosophy and objectives of education. Hence, the school curricula at various levels of education reflect the national ethos.

Pre and post-independence curriculum implementation at various levels of education in Nigeria reflect the colonial legacy of inculcating in the pupil the three Rs- reading, writing and arithmetic (Fafunwa, 2012). Objective of the colonial education was to produce clerks and cadre of civil servants that will help project, advance and foster colonial interest. It was therefore, class oriented, partial and discriminatory. The content, structure, pattern, meaning and function of the colonial education curriculum were dysfunctional in the context of the needs and inspirations of an emergent independent nation. The colonial education failed to institute a functional education that will advance the needs of the society. Consequently, the colonial schools failed to imbue the school leavers with the requisite skills and competencies for adaptation and contribution, to the wider society.

Supporting the view that the young school leavers from Nigerian education system should be well equipped with requisite skills for survival; Okeke and Egbunonu, 2018; Oli, 2010 and

Adekoya 2016 opined that the youths should be equipped with appropriate scientific and technological knowledge and skills that will empower them economically for survival in our modern age of science and technology. The best and easiest way of achieving this is through acquisition of entrepreneurial skills embedded in the science curriculum for the secondary and tertiary levels of education.

An entrepreneurial skill according to Olagunju (2014) is the ability of an individual to exploit an idea and create an enterprise whether big or small not only for personal gain but also for social and developmental gain. Hisrich and Peters (2012) defined entrepreneurial skill as the ability to create something new with value by devoting the necessary time and effort, assuming the resulting rewards of monetary and personal satisfaction and independence. Entrepreneurial skills are acquired through training that emphasizes the acquisition and development of appropriate knowledge and skill that will enable an individual to maximize the resources around him within the limit of his capability. Entrepreneurial skill consists of effective utilization of ideas, information and facts that help a learner develop competencies needed for firm career commitments such as setting up business, marketing, services or being productive, wealth creators, employers of labour and self-reliant thereby contributing in nation building. These skills applicable in electrical and electronics graduates is the same as the skill needed in solar power installation. For effective installation of solar power system there is need for electrical and electronics graduates to possess the required skills. Without the adequate installation of solar power there will be inadequate electricity supply.

Electricity has become an integral part of modern society. Electricity according to Ogbuanya (2010) is a branch of science which deals with the motion, emission and behaviour of current as free electrons especially in vacuum, gas or photo tubes and special conductors or semiconductors. Electronics on the other hand involves electronic components, devices, systems or equipment, and these devices operate on a relative low voltage (Crecraft &

Gergey, 2012). The technology of electronics can be broadly grouped into analogue and digital electronics. As the society progresses, human dependence on electricity continues to grow. The constant development of technology and the dependent on electricity continue to grow. The constant development of technology and the growth of developing countries add to the increasing demand for electricity (Akam, 2010). In the nearest future, the ability to keep up with the demand of electricity due to the rapid development of technology using current energy-producing technologies will be outstripped (Parlin, 2012). In other to meet up with the demand of electricity by the consumers, there is need for alternative and reliable sources of electric power such as solar photovoltaic system.

A solar photovoltaic system is a power system designed to supply usable solar power by means of photovoltaic (Sambo, 2011). Photovoltaic (PV) cover the conversion of light into electricity using semi-conducting materials that exhibit the photovoltaic effect. It consists of an arrangement of several components, including solar panels to absorb and convert sunlight into electricity, a solar inverter to change the electric current from direct current (DC) to alternative current (AC), as well as mounting, cabling and other electrical accessories to set up a working system. A photovoltaic system converts the sun radiation into usable electricity. This can only possible by qualified electrical and electronics graduates with adequate skills.

To establish a business is simple but to remain and be relevant in it is a difficult task that need to be acquired. These skills that electrical and electronics graduates need for them to be self-reliance and remain relevant in the business is known as entrepreneurship skill. The purpose of this research is to determine the entrepreneurship skills needed and possessed by electrical and electronics graduates for the solar power installation.

1.2 Statement of the Problem

Graduate of technical schools especially electrical and electronics across the country are charged with the responsibility of producing young school levers whom by virtue of the training they received should be practically oriented, be employable and be self-employed. Over the years poor power solar installations had been recorded (Sahu, 2015). The problem of poor solar power installations is attributed to poor and wrong installation by unqualified electrical and electronic graduates. Alam, (2013) observed that it might be emanating from the lack of creativity and incompetent in skill performance.

Lack of creativity and unsatisfied performance of graduates were researched by Alwasilah (2012), Alwasilah discovered; insufficient facilities, lack of motivation, insufficient funding, personal factors, among others to be responsible for poor skill performance among graduates of Technical Colleges, Polytechnic and University. Many attempt have also been made in solving the problems stated above by Alwasilah which have not given a good result. One thing is to be self-employed or be employable by others, another thing is to stand the test of time. The ability of an electrical electronics graduate to be self-employed and satisfy his customers and able to stand the test of time are skills that are requested to become an electrical electronic entrepreneur. Therefore, there is need to determine the entrepreneurship skill needed and possessed by electrical electronics graduates for solar power installation.

1.3 Purpose of the Study

The main purpose of the study is to determine the level of entrepreneurship skills needed and possessed by electrical and electronics graduates for solar power installation. Specifically, the study seek to determine:

1. To determine the entrepreneurship skills needed by electrical and electronics graduates for solar power installation.
2. To determine the entrepreneurship skills possessed by electrical and electronics graduates for solar power installation.
3. To provide strategies for improving electrical and electronics graduate's on entrepreneurship skills possessed for solar power installation.

1.4 Significance of the Study

The study will be significant to technology and engineering teachers, graduate student, solar power establishment and Niger state youth empower, especially, the unemployment students of electrical and electronic technology. It will be significant in knowing the proper and most efficient method in equipping them with necessary skills in establishing solar power installation in Niger state.

The teachers with attain higher knowledge achievement and knowledge the impact of the addition of entrepreneurship study in the school curriculum and passing the knowledge and skill to the student require for them to be competent and efficient and furthermore, foster value and idea generation that determine individual entrepreneurship.

1.5 Scope of the Study

This study is delimited to analysis of entrepreneurship skills needed and possessed by electrical electronics graduates for solar power installation in technical institution in Niger State. The areas covered include the entrepreneurship skills needed, the entrepreneurship skill possessed and strategies that will improve the entrepreneurship skills possessed by electrical electronics graduate for solar power installation in electrical/electronic departments in technical institutions in Niger State. The study will not cover other department.

1.6 Research Questions

1. What are the entrepreneurship skills needed by electrical and electronics graduates for solar power installation?
2. What are the entrepreneurship skills possessed by electrical and electronics graduates for solar power installation?
3. What are the strategies for improving electrical and electronics graduate's on entrepreneurship skills possessed for solar power installation?

1.7 Hypotheses

The following null hypotheses will be tested in the study:

H_{01}: There is no significant difference in the mean response of solar power establishment and lecturers on entrepreneurship skills needed by electrical and electronics graduates for solar power installation.

H_{02}: There is no significant difference in the mean response of solar power installer and electrical electronic graduates on the entrepreneurship skills possessed by electrical and electronics graduates for solar power installation.

H_{03}: There is no significant difference in the mean response of solar power establishment and lecturers on the strategies for improving electrical and electronics graduate's on entrepreneurship skills possessed for solar power installation.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Electrical power and electrical electronic technology.

Electrical power is the engine room of all the development. Onyebuenyi and Alio (2017) noted that no nation can be classified as developed without adequate supply of infrastructural facilities which includes electricity; the supply of electricity is accountable for slow pace of development especially when the supply is poor, inadequate and epideptic in nature. Subsequently, due to the fact that source of conventional means of energy generation (coal, fossil fuel and gas) are fast depleting most homes and industrialized countries have started resorting to the use of solar energy as a renewable sources of energy. Solar power is the conversion of sunlight into electricity; by using photovoltaics. Solar energy is radiant light and heat from the sun that can be harnessed using a range of ever evolving technologies like solar photovoltaic and solar thermal energy (International Energy Agency 2011). Solar energy system has not only emerged as a renewable energy source but it has generated large job opportunities in the state and the Nation at large in the design, harvesting, installation and maintenance of solar energy system (Oluka and Onyebuenyi, 2017).

Solar power installation involves the assempledge of solar power Component which include solar panel, charge controller, battery, inverter and etc for efficient and effective performance. Olubunmi (2015) in Oluka and Onyebuenyi (2017) pointed out that many jobs can be created through solar installation and running of solar energy system.

National Directorate of Employment (NDE, 2012) submits that there is need for capacity building at industrial, institutional and personal levels for acquiring technical, organizational

and managerial skills for increased development in renewable energy. These abilities are one of the goals of electrical electronics technology education.

Electrical electronics technology

Electrical electronics technology education is a programme of study that is offered in tertiary institution like college of education, polytechnics and universities (Oluka, 2016). The programme is given to the undergraduates of such institutions to equip them to face the challenges of employment or unemployment that comes after their graduation. Onoh (2013) stated that graduates of technology programmes must possess some degree of competencies in managerial, technical and financial accounting competencies to become successful entrepreneur. This was supported by Obi (2010) who posited that these skills are teachable and are thereby improved upon when the individual is in practice after undergoing well supervised training.

Managerial skills according to Osuala (2004) acquisition of management skills through entrepreneurship education are indispensable towards producing a self-reliant nation, with dynamic economy. Managerial skills involves efficient and effective use of all the available resources which include human, materials and financial resources in order to achieve a desirable task. It also involves the manager's knowledge and ability to work with people (customer and employee).

2.1.2 Concept of entrepreneurship

The word entrepreneurship is widely used today. However, offering a specific and ambiguous definition of entrepreneurship is still challenging. This is not because the definition is not available, but because there are too many, and even these definitions rarely agree with each other on some essential characteristics of entrepreneurship. For instance, Ramadani (2015) defined entrepreneurship as willingness and ability of an individual to seek out investment

opportunities, to establish and run an enterprise successfully. According to Kerrin *et al.* (2017), entrepreneurship is the willingness and the ability of an individual to seek out investment opportunities in an environment and be able to establish and run an enterprise successfully based on the identified opportunities. Gorgievski and Stephan (2016), defined entrepreneurship as the process of creating something different with value by devoting the necessary time and effort; assuming the accompanying financial, psychological and social risk; and receiving the resultant rewards of monetary and personal satisfaction.

A more expanded definition of entrepreneurship was given by the entrepreneurship centre of Miami University of Ohio as cited by Henriksen *et al.* (2016) as the process of identifying, developing and bringing a vision to life. The vision may be an innovative idea, an opportunity, or simply a better way to do something. The end result of this process is the creation of new venture, formed under conditions of risk and considerable uncertainty.

However, Henriksen (2016), posited that entrepreneurship is the creation of new enterprise that gives value to humanity by filling up neglected areas. On the other Doern (2019) defined entrepreneurship as a process of organizing and managing of business. Through entrepreneurship education students of electrical installation and maintenance works can be exposed to wide range of business skills. That means the new enterprise created must give value to humanity or fill up a yearning vacuum left unfilled. The individual who creates the new enterprise is therefore called entrepreneur.

2.1.3 Entrepreneurship skills need for solar power installation

Entrepreneurship skills are necessary skills needed to succeed in any engineering trade, most especially electrical installation and maintenance works. Entrepreneurial skills according to Adeyemo (2009) are developed competencies required to initiate and sustain a business venture. They are basic skills necessary to enable you start, develop, finance and succeed in

business. Salgado-banda (2005), viewed entrepreneurial skills as abilities to have self-belief, boldness, for internal management and external advancement of the firm in all aspects.

Olagunju (2004), described Entrepreneurial skills as the ability of an individual to exploit an idea and create enterprise (small or big) not only for personal gain but also for social and development gains. Hisrich and Peters (2002), also described Entrepreneurial skills as the ability to create something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence. Therefore Rychem and Solagnik (2003) noted that entrepreneurial skills are acquired through tanning that emphasizes the acquisition and development of appropriate knowledge and skills that will enable an individual to maximize the resources around him within the limits of his capability. Entrepreneurial skills consist of effective utilization of ideals, information and facts that help a learner developed competencies, marketing, services, or being productive employee of organizations (Olibie and Obidike, 2008). In this study, Entrepreneurial skills are the basic skills require to enable students of electrical installation and maintenance work in the technical colleges start, develop, finance, and succeed in electrical enterprises and these are require by the students through entrepreneurship training.

Advocacy for skill manpower needs for Nigeria economic, industrial and technology development and retarding fate of paid employment demands that students of electrical installation and maintenance work and other vocational trades in the technical college should possess adequate entrepreneurial skills for the pursuit of self-reliant and employer of labour. According to Aina (2000), described training of the students to acquire entrepreneurial skills as the surest way of coping in a distressed and depressed society. In the opinion of Ogwo (2004) entrepreneurial skills deficiency has been implicated for failure of some technical colleges products who venture into self-employment.

In addition Walden in Agbogidi (2007), stressed that business failure can be attributed to many factors such as economic, personal condition, owners lack of managerial skills and personal qualifications to operate a business. Therefore, students of electrical installation and maintenance work in technical colleges need training on entrepreneurship so that they can be a potential entrepreneur in electrical trade. Amaewhuke in Agbogidi (2007) emphasized the need for apprentices to be taught basic entrepreneurial skills because most of them after training establish their own business and also engage in training others.

Hence for students of electrical installation and maintenance work in the technical colleges to operate successfully an electrical enterprise, there are five basic skills they must really have to function effectively as an electrical entrepreneur. These skills are: management skills, planning skill, organization skill, directing skill, controlling skill, technical skills, marketing skills, financial management skills and communication skills.

Management Skills

Basic knowledge in management is needed at initial stage of running an enterprise and also later during the development stage. At the beginning, the management of an enterprise is carried out by the entrepreneur who must perform all the actions needed required for the business Crises occur when the enterprise is successfully expanding and the entrepreneur is not capable of running it due to lack of needed knowledge and managerial skills.

Potential entrepreneur must have knowledge and skills of management for efficient and effective in managing enterprises. Aliyu (2008) stated that entrepreneurs that have not participated in the management of other enterprises before establishing theirs will be lacking in managerial experience. He stated further that absence of such experience will limit the problem solving ability of the entrepreneur.

Osuala (2000) defined management as an active process of decision making on the use of human and material resources of an organization through the coordinated performance of the

primary element of management such as planning, organizing and controlling activities. Koontz and Weighrich (2005) also defined management as the process of designing and maintaining an environment in which individuals working together in groups efficiently accomplish selected aims. Osinem (2008), described management as the co-ordination of all the resources of an organization through the process of planning, organizing, directing and controlling in order to attain organizational objectives. Nwafor (2007) categorized management into: personnel management, materials management, purchasing management, money management and machinery management.

Management according to Wikipedia (2010) is the acts of getting people together to accomplish desired goals and objectives efficiently and effectively. He stated further that management comprises of planning, organizing, directing, and controlling.

Planning Skill

Planning is the foundation area of management. It is the base upon which all the areas of management should be built. Planning requires administration to assess; where the company is presently set, and where it would be in the upcoming. From there an appropriate course of action is determined and implemented to attain the company goals and objectives.

Planning is unending course of action. There may be sudden strategies where companies have to face. Something they are uncontrollable. You can say that they pessimistically. Depending on the conditions, a company may have to alter its course of action in accomplishing certain goals. This kind of preparation, arrangement is known as strategic planning. In strategic planning, management is analyzed inside and outside factors that may affect the company and so objectives and goals. Here they should have a study of strengths and weakness opportunities and threats. For management to do this efficiently, it has to be very practical and ample.

Organizing Skill

The second function of the management is getting prepared, getting organized. Management must organize all its resources well before putting into practice the course of action to decide that has been planned in the base function. Through this process, management will now determine the base function. Through this process, management will now determine the inside directorial configuration; establish and maintain relationships, and also assign required resources. While determining the inside directorial configuration, management ought to look at the different divisions or departments. They also see to the harmonization of staff, and try to find out the best way to handle the important tasks and expenditure of information within the company. Management determines the division of work according to its need. It also has to decide for suitable departments to hand over authority and responsibilities.

Directing Skill

Directing is the third function of the management. Working under this function helps the management to control and supervise the action of the staff. This helps them to assist the staff in achieving the company goals and also accomplishing their personal or career goals which can be powered by motivation, communication, department dynamics, and department leadership.

Employees those which are highly provoked generally surpass in their job performance and also play important role in achieving the company goal. And here lies the reason why managers focus on motivating their employees. They come about with prize and incentive programs based on job performance and geared in the direction of the employees requirements.

It is very important to maintain a productive working environment, building positive interpersonal relationships, and problem solving. And this can be done only with effective communication. Understanding the communication process and working on area that need

improvement, help managers to become more effective communicators. The finest technique of findings the areas that requires improvement is to ask themselves and others at regular intervals, how well they are doing. This leads to better relationship and helps the managers for better directing plans.

Controlling

Control, the last of four functions of management, includes establishing performance standards which are of course based on the company objectives. It also involves evaluating and reporting of actual job performance. When these points are studied by the management then it is necessary to compare both the things. This study on comparison of both decides further corrective and preventive actions.

In an effort of solving performance problems, management should higher standards. They should straightforward speak to the employee or department having problem. On the contrary, if there are inadequate resources or disallow other external factors standard from being attained, management had to lower their standard as per requirement. The controlling processes as in comparison with other three, is unending process or say continuous process. With this, management can make out any probable problems. It helps them in taking necessary preventive measures against the consequences. Management can also recognize any further developing problems that need corrective actions.

Effective and efficient management leads to success, the success where it attains the objectives and goals of the organizations. Of course for achieving the ultimate goal and aim management need to work creatively in problem solving in all the four functions. Management not only has to see the needs of accomplishing the goals but also has to look in to the process that their way is feasible for the company.

Technical Skills Need for Solar Power Installation

Technical skills is one of the entrepreneurial skills, a potential electrical entrepreneur must possess to succeed in electrical enterprises. Lyons (2002) described technical skills as the skills necessary to be successful one line of business. According to Osinem (2008), technical skills are skills require a good understand and proficiency in a specific activity, particular one involving methods, procedures or techniques and processes. He started further that, technical skills can be acquired through learning. Ogbuanya and Fakorede (2009), described technical skills as the ability to do something expertly and well, in accordance to set standard or manufacturers' instruction. Katz (2009) viewed technical skills as one of the essential skills needed by manager and entrepreneur. According to him, technical skills are knowledge and proficiency in a certain specialized field, such as engineering, computers, financial and managerial, accounting, or manufacturing. Technical skills are those specialized knowledge and ability required of entrepreneurs to perform the primary task inherent in a particular supervisory position. All jobs required some specialized and many people develop their technical skills on the job. Vocational and on job training program can be used to develop this type of skills. According to Hisrich and Peter (2002), technical skills include writing, oral communication, monitoring environment, technical business management, technology, interpersonal, listening, ability to organize, network building, management style, coaching and being a team player.

Osuala (2004) said that, the prospective small business manager should have adequate technical ability to a working knowledge of the physical operation of the business, sufficient conceptual ability, the power to visualize, co-ordinate and integrate the various operation of the business into a synergistic whole and an ample interpersonal ability, the skill to manage the people in the organization and to motivate them to higher level of performance. He went further to explain that adequate experience and special attitude are very important in the

fields of business. Therefore potential entrepreneur in electrical installation and maintenance works must possess technical skills.

According to Okeke (2002), to possess skill is to demonstrate the habit of acting, thinking and behaving in a specific activity in such a way that the process becomes natural to the individual through repetition or practices. More so, skill development and improvement is very important in harnessing a nations natural resources. This is because skill acquisition and its improvement help in developing and advancing intrinsic potentials in individuals. In support of this, Osuala (2004) asserted that most technical skills training actually present great challenges to the learner by integrating practical work, theoretical knowledge, common sense, observation ability and encouragement in an occupation.

Technical skills can be acquired in technical colleges. According to Okoro (2006), technical colleges are regarded as the principal vocational institution in Nigeria which is designed to prepare the individual to acquire practical skills, knowledge, and attitude require of technician at sub-professional level. Okoro stated further that the technical colleges give full craftsmen training intended to prepare students for entry into various occupations. Technical colleges train craftsmen levels in occupation areas among which include electrical installation and maintenance works.

The graduates of technical colleges in Ondo State who are supposed to be self-employed ended up in riding commercial motorcycle called Okada because they lack technical skills that make them secure employment or self-reliant. Okoro (2006), remarked that the products of technical institution do not have the knowledge and skills that will enable them to take up the available jobs, the insufficient colleges training in term of technical skills required of the various occupation in electrical installation and maintenance work trade has caused failure of technical college graduates to secure paid employment. Entrepreneurial skills deficiency according to Ogwo (2004), also implicated for the failure of some technical colleges

graduates that might have ventured into self-employment. Therefore, for students of electrical installation and maintenance works to be self-employed and employed others, they must acquire technical skills which is one of the entrepreneurial skills.

Communication skills needed

Communication skills is the ability to express oneself and understand others so that ideas can be shared. It is a skill that enable an entrepreneur to convey information so as to receive and understand oneself. Communication skills in the opinion of Richard, Gary and Larry (1991) are skills entrepreneur need to others what their jobs and the goal of the venture is in order to motivate this people to work effectively. Good communication skills is the skill or ability to transfer one's thought, ideas and information from the sender to receiver with understanding effectively and efficiently. Therefore, communication is the transfer of information/ideas from the sender to the receiver with understanding. Adeoti (2012) identified communication skills as follows;

Communicate orally and efficiently.

Explaining to others what their job involves

Understanding the needs of customers.

Being open minded.

Acknowledging difference in opinions.

Provide specific details supported with concrete examples.

Sharing of ones feelings and thoughts.

Accepting feedback.

2.2 Theoretical Framework

2.2.1 Learning Theory of Connectionism

Acquisition of entrepreneurial skills for self-reliant is based on learning theory of connectionism advanced by Edward L. Thorndike (1874-1949). This theory states that learning is the outcome of the relationships between stimuli and responses.

Propagation of the theory of connectionism was however, more associated with Edward Thorndike than anyone else. Connectionism as a theory is based on the assumption that elements, as well as ideas become associated with one another through experience; and that complex ideas can be explained via a set of simple rules. These assumptions were expanded to introduce concept such as supervised learning and distributed representation. These ideas were summed into three primary laws of learning namely; the law of readiness, law of exercise and law of effect.

Law of Readiness: in this law learner must be ready and in good condition in order to be success in his learning. Readiness here must be in psychology and physically. Ready in physic means learner is not in sick condition, and ready in psychology means learner do not have mental sickness and other. Beside, learner must be readiness in mastering a science and its basic competence.

Law of Exercise; that is connections between condition and action can be weak if the exercise is stopped.

Law of Effect. Every organism, has own respond in facing a new stimulus and new situation. If organism determines a respond or action that possesses a satisfaction to that organism in facing the new situation and condition, they will do the same action if later they face same situation and condition. Meanwhile, behavior which do not possesses satisfaction in facing

the new situation, this action will be abandoned forever by the organism. This thing will be occurred to all organisms automatically.

As the teacher neglects this principle, much of the wastage is caused in education. When students interest is not generated, proper learning will not take place. They go through their studies in an indifferent manner and much of the teachers work is wasted. Proper set induction is therefore important for teaching entrepreneurial skill.

2.3 Review of Related Empirical Studies

Onoh (2015) carried out a study on potentials required by electrical electronics technology education graduates for entrepreneurship development of small scale solar power Installation Company. The study was essential due to the current issue of unemployment among graduates of tertiary institutions and a challenge to the society in the area of epileptic power supply in Nigeria. Three research questions and three null hypotheses guided the study. A survey research design was adopted while the population was 46 graduates of electrical electronics technology education in Anambra state. Instrument for data collection was structured questionnaire which was made up of three sections according to the research questions that guided the study. The questionnaire has a total of 28 item statements designed in 4 point response categories of very highly needed, highly needed, moderately needed, and not needed with numerical values of 4, 3, 2 and 1 respectively. Mean with standard deviation were used to answer the three research questions while t-test was used to test the three null hypotheses at .05 level of significance.

The findings of the study showed that:

Ability integrate different employee to work harmoniously as a group to achieve organizational objective among others are the management skills required for self-employment.

Also, it was found that ability to vary the output voltage, current and power from the solar panel and batteries among others are the technical skills required. Recommendation were made which include youths should be encourage to embark on self-actualization skills through identified skills. The study related to present study, they are all entrepreneurship studies, difference still exists between them. Onoh study was concerned on entrepreneurship development of small scale solar power Installation Company while the present study focuses on entrepreneurship needed and possessed by electrical electronic graduates for solar power installation.

Bidyut (2018) conducted a study on addressing the skills gap for facilitating renewable energy entrepreneurship. With the rising global energy issues regarding sustainability, environmental degradation and fossil fuel exhaustion, several countries are now focusing on finding alternative sustainable solutions. At the current state, there are no clear alternatives other than renewable energy sources which have recently led to the increase of entrepreneurial businesses primarily dealing with the advancement and uptake of renewable energy technologies. However, being an under-researched area, there is no clarity on the skills associated with the business models of the renewable energy sector. What are the current trends in terms of the interpersonal, professional and core technical skills that employers are actively seeking in this sector? How will nascent entrepreneurs address the skills gap or subject specific knowledge challenges? Using content analysis, this study reviews online job advertisements to shed some light on the skills distribution in management and technical-oriented roles in the renewable job sector. The study found management-oriented roles to have a more widespread skills parameter in the personal skills category as compared to technical-oriented roles. The professional and technical skills distribution shows technical oriented jobs seeking a higher rate of subject-specific skills or knowledge than management-oriented roles. The study also found a lack of choices for undergraduate degrees

on renewable energy when compared with postgraduate degree choices in the UK. This raises several questions like whether such gaps in subject choices at universities are limiting the entrepreneurial prospects among students. Are these factors fuelling the technical skills deficit currently witnessed in the renewable energy job sector? Perhaps, there is a need for universities to revisit their business and programme design models to investigate whether the undergraduate programmes are being too generic for the 21st century entrepreneurial market? The study related to the present study, they are all carried out to identify skills to empower graduates youths. The difference exist between them. Bidyut study was centered on addressing the skill gap for facilitating renewable energy entrepreneurship while the present study focuses on gap analysis on entrepreneurship skills needed and possessed by electrical electronic graduates for solar power installation.

Awonuga (2019) carried out a research on skills gap assessment to enhance the delivery of technical and vocational education: a case study of electrical installation graduates in Ogun and Kaduna states of Nigeria. Nigeria requires an efficient and a capable skilled workforce to manage the construction industry. The workforce comprises the engineers, technicians and the craftsmen from Nigerian universities, polytechnics and technical colleges. The importance of the skilled workforce cannot be overemphasized as it contributes immensely to the social and economic development of the country. The continuous growth in and expansion of this industry in Nigeria have led to exponential growth in positions that require certain technical skills. However, finding workers with the requisite skills remains a major challenge for employers in Nigeria. Employers have expressed concerns about the lack of adequately trained technical college graduates and feel that educational institutions under Technical and Vocational Education and Training (TVET) are not producing graduates with skills that match the needs of industry. The aim of this research is to create a measuring and mapping framework to address the construction skills gap through improved technical and

vocational education with reference to the challenges inherent in the Nigerian electrical installation education programme.

The pragmatist philosophy and sequential exploratory mixed method were adopted in order to fulfil the research aim and objectives. During the early stages of the study, data were collected through focus group discussion with the electrical zonal education officers, electrical installation instructors and electrical installation heads of departments of technical colleges both in Kaduna state in Northern Nigeria and Ogun State in Southern Nigeria. Locales in northern and southern Nigeria were considered, due to previously reported educational disparity between the northern and southern parts of Nigeria in the extant literature.

Their views were sought through six focus group discussions for the qualitative phase of the study. For the quantitative phase, a questionnaire survey was administered to electrical installation contractors.

The key findings from the study indicated that the technical college institutions in Ogun and Kaduna states in Nigeria, faced problems with regards to their role in the provision of knowledge and skills. The study identified that skills gap exists among the skilled workforce in soft skills which comprises of thinking ability, reading skills, written communication skills, leadership skills, negotiation skills, time management skills and core skills for learning. Gaps were found in curriculum as it was out of date. Additionally, there is a lack of facilities and equipment needed for teaching and learning. The gap that exists could be addressed and improved by training and retraining the skilled workforce, introducing apprenticeship training and to make sure that the electrical installation programme curriculum is reviewed, with a view to make training more relevant to the needs of the construction industry. The findings of the study were used to develop a framework which was validated

via a survey which indicated that the framework is valuable and suitable for use in practice since the research shows that most of the respondents accepted the research findings and recommendations for success. This research offers recommendations that will assist the industry, schools and public at large in resolving issues on skills gap assessment in Nigeria. The two studies are similar in objectives, they are studies for graduate youths empowerment. One focuses on gap analysis of entrepreneurship skills needed and possessed by electrical electronic graduates for solar power installation while the other centers on Skip gap assessment to enhance the delivery to technically and vocational education.

2.4 Summary of Review of Related Literature

Electrical power is the engine room of all the development. Onyebuenyi and Alio (2017) noted that no nation can be classified as developed without adequate supply of infrastructural facilities which includes electricity; the supply of electricity is accountable for slow pace of development especially when the supply is poor, inadequate and epideptic in nature. Subsequently, due to the fact that source of conventional means of energy generation (coal, fossil fuel and gas) are fast depleting most homes and industrialized countries have started resorting to the use of solar energy as a renewable sources of energy. Solar power is the conversion of sunlight into electricity; by using photovoltaics.

Entrepreneurship skill needed and possessed for solar power installation requires seven major skills for effective performance. These skills includes; management, planning, organizing, directing, controlling, technical and communication skills.

Management skills in entrepreneurship skill are describe as the management of an enterprise is carried out by the entrepreneur who must perform all the actions needed required for the business Crises occur when the enterprise is successfully expanding and the entrepreneur is not capable of running it due to lack of needed knowledge and managerial skills. Planning

skill is also described as the foundation area of management. It is the base upon which all the areas of management should be built. Organizing skill; Management must organize all its resources well before putting into practice the course of action to decide that has been planned in the base function. Directing skill: This helps them to assist the staff in achieving the company goals and also accomplishing their personal or career goals which can be powered by motivation, communication, department dynamics, and department leadership. Controlling skill involves evaluating and reporting of actual job performance. When these points are studied by the management then it is necessary to compare both the things. This study on comparison of both decides further corrective and preventive actions. Technical skill described by Lyons (2002) described technical skills as the skills necessary to be successful one line of business. Communication skills is the ability to express oneself and understand others so that ideas can be shared. Theory of Connectionism also found very relevant to the study. A lot of relevant empirical studies conducted by different authors are also reviewed to give research the necessary directions to achieve the purpose of the study. None of the empirical study reviewed was carried out to determine the gap analysis of entrepreneurship skills needed and possessed by electrical electronic graduates for solar power installation. This is the gap to be filled by this study.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter discusses about the methodology by which the researcher used to conduct the study. Thus, design of the study, Area of the study, Population of the study, Sample and Sampling technique, Instrument for data collection, Validation of the instrument, Reliability of instrument, Administration of instrument, Method of data analysis and decision rule.

3.2 Design of the Study

The study adopt the descriptive survey research design used to determine the level of entrepreneurship skills needed and possessed by electrical electronics graduates for solar power installation. The design is suitable for the study because it solicit information from solar power establishment staff and technical teachers.

3.3 Area of the Study

The study will be conducted in all the tertiary institutions that are offering electrical electronics in Niger State and solar power establishment in Minna Metropolis. The tertiary institutions are: Federal University of Technology Minna, Nigeria, Federal Polytechnic Bida, Niger State, State Polytechnic Zugeru, Niger State and Niger State College of Education Minna, Niger State.

3.4 Population of the Study

The population for the study consists of 65 respondents comprising 45 electrical electronics lecturers and 20 solar power establishment staff.

3.5 Sample and Sampling Technique

The sample size of the study was 45 which consist of 25 electrical electronic lecturers and 20 staff of solar power establishment. Simple random sampling techniques was used to select two tertiary institutions in Niger State. Which are: Federal University of Technology, Minna, Nigeria and Niger State College of Education Minna, Niger State. All their lecturers and final year students were used. Also, all the staff of solar power establishment were used.

3.6 Instrument for Data Collection

The instrument for data collection was a structured questionnaire designed by the researcher in collecting data for the study. The questionnaire was made up of four sections (A, B, C, and D). Section A contains items on personal information of the respondents. Section B which contain items seeks to obtained information on the entrepreneurship skills needed by electrical and electronics graduates for solar power installation. Section C contain items on entrepreneurship skills possessed by electrical and electronics graduates for solar power installation. While Section D which consist of items seek to determine the strategies for improving electrical and electronics graduates on entrepreneurship skills possessed for solar power installation. The questionnaire items were based on four points scale. Items for section B, C and D contain four responses category each. The response categories for section B are Highly Needed, Needed, Somehow Needed and Not Needed. The response categories for section C Highly Possessed, Possessed, Somehow Possessed and Not Possessed. While, the response categories for section D are Strongly Agree (SA), Agree (A), Somehow Agree (SA) and Somehow Disagree (SD). These response categories will be assign numerical values of 4, 3, 2 and 1 respectively.

3.6 Validation of Instrument

The instrument will be validated by three lecturers in the department of Industrial and Technology Education, Federal University of Technology, Minna. The comments and suggestions made by the validators on each of the instruments will be incorporated into the final draft of the instrument.

3.7 Reliability of Instrument

In order to determine the reliability of the research instrument, a pilot test will be conducted using fifteen in other locations. During the test, the questionnaires were distributed by the researcher. The questionnaire was filled by the respondents and then returned to the researcher. The data collected will be analyzed using Crombach Alpha.

3.8 Administration of Instrument

The instrument that will be used for the data collection will be administered to the respondents by the researcher and three research assistant in the study area.

3.9 Method of Data Analysis

Data collected will be analyzed using mean and standard deviation for the research questions while t-test will be used to test the hypothesis at the 0.05 level of significant. A four (4) point rating scale will be analyse the data as shown below.

These response categories will be assign numerical values of 4, 3, 2 and 1 respectively.

S/N				Point
1	Highly Needed (HN)	Highly Possessed (HP)	Strongly Agree (SA),	4
2	Needed (N)	Possessed (P)	Agree (A),	3
3	Somehow Needed (SN)	Somehow Possessed (SP)	Somehow Agree (SA)	2
4	Not Needed (NN)	Not Possessed (NP)	Disagree (D).	1

Therefore, the mean value of the 4 point scale is:

$$\bar{X} = \frac{4+3+2+1}{4} \bar{X} = \frac{4+3+2+1}{4} = \frac{1010}{4\ 4} = 2.5$$

3.10 Decision Rule

The cut off point of the mean score of 2.50 will be chosen as the agreed or disagreed point. This will be interpreted relatively according to the rating point scale adopt for this study. Therefore, an item with response below 2.49 and below will be regard or consider as disagreed while an item with response at 2.5 and above was regard or considered as agreed.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

This chapter presents the results of the data analysis for the study. The presentation was organized according to the research question and null hypothesis formula for the study.

4.1 Research Question 1

What are the entrepreneurship skills needed by electrical and electronic graduates for solar power installation in technician institutions Niger state?

The data for answering research question 1 are represented in Table 1

Table 4.1: Mean Responses of the respondent on the Entrepreneurship skills needed by electrical and electronic graduates for solar power installation in technical institutions Niger state.

S/N	ITEMS	X_1	X_2	X_t	REMARK
1.	Ability to use the right tools for the right job	3.55	3.50	3.53	NEEDED
2.	Ability to use managerial skill	3.66	3.10	3.19	NEEDED
3.	Ability to troubleshoot	3.33	3.50	3.42	NEEDED
4.	Ability to install and servicing skill	3.66	3.25	3.46	NEEDED
5.	Ability to up-skilling	2.77	2.95	2.86	NEEDED
6.	Ability to use appropriate personal equipment	3.28	3.20	3.24	NEEDED
7.	Ability to use computer literacy skill	3.44	3.50	3.47	NEEDED
8.	Ability to use analytic skill	3.55	3.25	3.40	NEEDED
9.	Ability to use critical thinking skill	3.55	3.75	3.65	NEEDED
10.	Ability to use effective communication skill	3.44	3.25	3.35	NEEDED
11.	Ability to use observatory skill	3.28	3.15	3.26	NEEDED

Keys: N1= numbers of lecturers, N2= numbers of solar installers, X1= mean of lecturers, X2= mean of solar installers, Xt= average mean of lecturers and solar installers

The data presented in table 1 revealed that the respondents agreed with all the items 1,2,3,4,5,6,7,8,9,10 and 11 with mean score above 2.50 which mean all the items are needed.

4.2 Research Question 2

What are the entrepreneurship skills possessed by electrical and electronic graduates for solar power installation in technical institutions Niger state?

Table 4.2: Mean Responses of the respondent on the Entrepreneurship skills needed by electrical and electronic graduates for solar power installation in technical institutions Niger state.

S/N	ITEMS	X_1	X_2	X_t	REMARK
1.	Ability to use the right tools for the right job	3.44	3.00	3.22	POSSEDED
2.	Ability to troubleshoot	3.00	3.50	3.25	POSSEDED
3.	Ability to install and servicing	3.33	3.75	3.54	POSSEDED
4.	Ability to up-skilling	3.33	3.40	3.31	POSSEDED
5.	Ability to use appropriate personal equipment	3.22	3.40	3.31	POSSEDED
6.	Ability to use computer literacy skill	3.28	3.50	3.39	POSSEDED
7.	Ability to use analytic skill	3.66	3.65	3.67	POSSEDED
8.	Ability to use critical thinking skill	3.55	3.00	3.28	POSSEDED
9.	Ability to use effective communication skill	3.33	3.10	3.22	POSSEDED
10.	Ability to use observatory skill	3.11	3.25	3.18	POSSEDED
11.	Ability to use managerial skill	3.26	3.75	3.51	POSSEDED

The data presented in table 2 revealed that the respondents with all the items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11 with mean score above 2.50 which mean that all the items are possessed.

4.3 Research Question 3

What are the strategies for improving electrical and electronic graduates on entrepreneurship skills possessed for solar power installation?

Table 4.3: Mean Responses of the respondents on the strategies for improving electrical and electronic graduates on entrepreneurship skills possessed for solar power installation in technical institutions Niger state.

S/N	ITEMS	X_1	X_2	X_t	REMARK
1.	Up-skilling	3.28	3.25	3.27	AGREED
2.	Re-skilling	3.55	3.15	3.35	AGREED
3.	Attending workshop and seminars	3.28	3.50	3.39	AGREED
4.	The use of e-marketing	3.22	3.35	3.29	AGREED
5.	Ability to notice economic changes	3.33	3.40	3.37	AGREED
6.	Ability to motivate	3.66	3.20	3.43	AGREED
7.	Creative imagination	3.66	3.20	3.43	AGREED

The data presented in table 3 shows that the respondents agreed with all the items 1, 2, 3, 4, 5, 6 and 7 with mean scores above 2.50.

4.4 Findings of the Study

The following findings emerged from the study based on the research questions

A. Entrepreneurship skills needed by electrical and electronic graduates for solar power installation in technical institutions Niger state.

1. Ability to use the right tools for the right job
2. Ability to troubleshooting
3. Installation and serving skill
4. Up-skilling skill

5. Ability to use appropriate personal protective equipment (ppe)
6. Computer literacy skill
7. Analytic skill
8. Critical thinking skill
9. Effective communication skills
10. Observatory skill
11. Managerial skill

B. Entrepreneurship skills possessed by electrical and electronic graduates for solar power installation in technical institutions Niger state.

1. Ability to use the right tools for the right job
2. Ability to troubleshooting
3. Installation and serving skill
4. Up-skilling skill
5. Ability to use appropriate personal protective equipment (ppe)
6. Computer literacy skill
7. Analytic skill
8. Critical thinking skill
9. Effective communication skills
10. Observatory skill
11. Managerial skill

C. Strategies for improving electrical and electronic graduates on entrepreneurship skills possessed for solar power installation in technical institutions Niger state

1. Up-skilling
2. Re-skilling
3. Attending workshop and seminars
4. Use of e-marketing
5. Ability to notice economic changes
6. Ability to motivate staff
7. Creative imagination

4.5 Discussion of Findings

The finding of this study revealed 11 the entrepreneurship skills needed by electrical electronic graduates for solar power installation. Among this entrepreneurship skill: Ability to use the right tools for the right job, Computer literacy skill, Analytic skill, Critical thinking skill, Effective communication skill, Observatory skill, Managerial skill, Ability to use appropriate personal protective equipment [PPE], Up-skilling skill, Installation and servicing skill, Troubleshooting skill. The use of internet in sourcing for information, proper use of tools and equipment in electrical/electronic industries. compliance and utilization of standard codes, adequate observatory and analytic skill. These finding are in agreement with the opinion of lidimma (2008) that entrepreneur' s skill are skill which bases on technical skill. The author stated that technical skill determines the future of any enterprise. The study of Katz (2009) viewed technical skill agreed with the study of entrepreneurship skill needed by electrical/electronic graduate for solar power installation.

The finding of this study revealed 11 entrepreneurship skills possessed by electrical electronics graduates for solar power installation. These skills include Ability to use the right tools for the right job, troubleshooting skill, Installation and servicing skill, Up-skilling skill, Ability to use appropriate personal equipment [PPE], Computer literacy skill, Analytic skill, Critical thinking skill, Effective communication skill, Observatory skill, Managerial skill. This finding are in agreement with the opinion of Richard, Gray and Larry (2009) agreed to this study of entrepreneurship skill that this entrepreneurship skill can be possessed by electrical/electronic graduate for solar power installation.

The finding of this study revealed 7 strategies for improving electrical and electronic graduates on entrepreneurship skills possessed for solar power installation. Among the strategies for improving electrical and electronic: Creative imagination, Ability to motivate staff, Ability to notice economic changes, Use of e-marketing and social media, Attending workshops and seminars, Up-skilling and Re-skilling. This finding in agreement with the opinion of Agbogidi (2007) that strategies improve the entrepreneurship skill which they all agreed that electrical/electronic graduate can be possessed for solar installation.

Hypothesis 1

There is no significant difference in the mean response of the lecturers and solar installer on the entrepreneurship skills needed by electrical and electronic graduates for solar power installation in technical institutions Niger state. The finding also indicate that respondents had the mean opinion on the entrepreneurship skills needed for solar power installation.

S/N	ITEMS	X_1	X_2	$S.D_1$	$S.D_2$	t-cal	REMARK
1.	Ability to use the right tools for the right job	3.55	3.50	2.29	1.58	0.10	NS
2.	Ability to troubleshoot	3.33	3.50	2.28	1.58	-0.35	NS
3.	Ability to install and servicing	3.66	3.25	2.47	1.50	0.82	NS
4.	Ability to up-skilling	3.03	3.03	1.20	1.37	-0.40	NS
5.	Ability to use appropriate personal equipment	2.42	2.38	1.05	1.49	0.17	NS
6.	Ability to use computer literacy skill	3.10	2.75	1.12	1.58	-0.12	NS
7.	Ability to use analytic skill	2.23	2.00	1.02	1.50	0.61	NS
8.	Ability to use critical thinking skill	3.20	3.25	0.97	1.69	-0.38	NS
9.	Ability to use effective communication skill	2.85	2.88	1.07	1.47	0.39	NS
10.	Ability to use managerial skill	3.66	3.45	2.47	1.56	0.41	NS
11.	Ability to use observatory skill	2.22	1.78	1.03	1.47	0.28	NS

Key:

N_1 = Numbers of Master Welders, N_2 = Numbers of Apprentice Welders, SD_1 = Standard deviation of Master Welders, SD_2 = Standard deviation of Apprentice Welders, NS = Not significant S = Significant.

The result shown in table 4.6 above indicates the compares between the electrical/electronic graduate and solar installer. Data revealed that items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11has a calculated t-value less than the t-critical value of ±1.98, hence hypothesis Ho for these items were upheld at 0.05 level of significance.

Hypothesis 2

There is no significant difference in the mean response of solar power installer and electrical/electronic graduate on the entrepreneurship skills possessed by electrical/electronic graduates for solar power installation.

S/N	ITEMS	X_1	X_2	$S.D_1$	$S.D_2$	t-cal	REMARK
1	Ability to use the right tools for the right job	3.44	3.00	2.38	1.38	0.94	NS
2	Ability to troubleshoot	3.00	3.50	2.13	1.58	-1.06	NS
3	Ability to install and servicing	3.33	3.75	2.25	1.69	-0.84	NS
4	Ability to up-skilling	3.33	3.15	2.37	1.45	0.48	NS
5	Ability to use appropriate personal equipment	3.22	3.40	2.22	1.57	-0.16	NS
6	Ability to use computer literacy skill	3.28	3.50	2.25	1.58	-0.45	NS
7	Ability to use analytic skill	3.66	3.65	2.48	1.65	0.02	NS
8	Ability to use critical thinking skill	3.55	3.00	2.41	1.38	1.17	NS
9	Ability to use effective communication skill	3.33	3.10	2.28	1.43	0.49	NS
10	Ability to use managerial skill	3.11	3.25	2.14	1.50	-0.30	NS
11	Ability to use observatory skill	3.26	3.75	2.24	1.69	-0.98	NS

The result shown in table 4.7 above indicates the compares between the electrical/electronic graduate and solar power installer. Data revealed that items 1, 2, 3, 4, 5, 6, 7, 8, 9 and 11has a calculated t-value less than the t-critical value of ±1.98, hence hypothesis Ho for these items were upheld at 0.05 level of significance.

Hypothesis 3

There is no significant difference in the mean response of solar power installer and lecturers on the strategies for improving electrical/electronic graduates on entrepreneurship skills possessed for solar power installation.

S/N	ITEMS	X_1	X_2	$S.D_1$	$S.D_2$	t-cal	REMARK
1.	Up-skilling	3.28	3.25	2.25	1.50	0.06	NS
2.	Re-skilling	3.55	3.15	2.43	1.45	0.82	NS
3.	Attending workshop and seminars	3.28	3.50	2.25	1.58	-0.45	NS
4.	The use of e-marketing	3.22	3.35	2.22	1.54	-0.27	NS
5.	Ability to notice economic changes	3.33	3.40	2.28	1.57	-0.14	NS
6.	Ability to motivate	3.29	3.00	2.26	1.38	0.64	NS
7.	Creative imagination	3.66	3.20	2.48	1.49	0.92	NS

The result shown in table 4.8 above indicates the compares between the electrical/electronic graduate and solar power installer. Data revealed that items 1, 2, 3, 4, 5, 6 and 7 has a calculated t-value less than the t-critical value of ±1.98, hence hypothesis Ho for these items were upheld at 0.05 level of significance

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

This is the representation of the summary, restatement of the problem, conclusion, educational implication of the findings, recommendations for implementation and suggestions for further research.

5.1 Summary of the Problem

Critical review and observation of the module and policy prepared by National Board for Technician Education reveals deficiency in technical institutions and inefficient and inadequate implementation in technical institutions in entrepreneurship skills which is a viral requirement for self-reliance and employment of graduates. Deficiencies and inadequate implementation of the entrepreneurship skills in the modules have made most graduates of electrical and electronic trade unemployed after schooling. This shortfall negates the overall objectives of technical education as a graduates could be joining the already populated and over-saturated labor market and end up being unemployed because they do not possess the knowledge of entrepreneurship skills for establishment.

The educational system do not guarantee the success of graduates in their occupational areas because of lack and inadequate entrepreneurship knowledge. Government and some private enterprise that were employing graduates of higher institutions in terms of technical services in Niger state now prefer to contact those technicians and craftsmen trained under the information sector (Apprenticeship programme). Lack of entrepreneurship skills by graduates has results to a situation whereby, most graduates hope solely on employment which are not forthcoming but could establish and manage solar power enterprise if they have and possess entrepreneurship skills and knowledge. Most of the graduates employed by solar power industries are unskilled in their area of specialization due to low quality instruction received while in school. To compensate for this deficiency and inadequate implementation in the

modules of technical education to reduce unemployment among graduates in this trade, there is need to investigate the entrepreneurship skills needed and possess by electrical and electronic graduates for solar power installation after graduation. Specifically, the study sought to identify:

1. Entrepreneurship skills needed by electrical and electronic graduates for solar power installation in technical institutions Niger state.
2. Entrepreneurship skills possessed by electrical and electronic graduates for solar power installation in technical institutions Niger state.
3. Strategies for improving electrical and electronic graduates on entrepreneurship skills possessed for solar power installation in technical institutions Niger state

5.2 Implication of Study

The findings of the study had implication for government, lecturers of electrical and electronic, students and solar installers. Government agency such as National Board for Technical Education will have to integrate the identified skills and the strategies in the study into the curriculum of technical institutions and ensure proper and adequate implementation in technical institutions across the nation. The government will provide necessary facilities for the implementation of the skills at various level. Lecturer will re-train and equipment themselves for the successful implementation of the new curriculum. Solar installers will visit and enroll in entrepreneurship training facilities and centres to possess entrepreneurship knowledge.

5.3 Contribution to Knowledge

The essence of this study is to identify the entrepreneurship skills needed and possessed by electrical and electronic graduates for solar power installation in technical institutions Niger

state. Specifically, the study emphasis and contributes to knowledge by identifying the following:

1. Entrepreneurship skills needed by electrical and electronic graduates for solar power installation.
2. Entrepreneurship skills possessed by electrical and electronic graduates for solar power installation.
3. Strategies for improving electrical and electronic graduates on entrepreneurship skills possessed for solar power installation.

5.4 Conclusion

Based on the findings of the study, the following conclusion were drawn:

Technology institutions in Nigeria are setup to equipment individuals in different occupation for either paid or self-employment, but observation reveal that entrepreneurship skill which is the major requirement for self-employment of graduate is not properly and efficiently integrated and has most of the graduates in electrical and electronic unemployment after school. Lack of entrepreneurship skill has resulted in a situation whereby most of the graduates hope solely on employment and not forthcoming but could establish solar power enterprise if they possess entrepreneurship skills. This study is now setup in the area of the shortcomings. The study now then identify relevant entrepreneurship skills needed, entrepreneurship skills possess and the strategies for improving electrical and electronic graduates on entrepreneurship skill possessed for solar power installation.

5.5 Recommendations

Base on the findings of the study, the following recommendations were made:

1. The facilities for effective implementation of the identified skills should be provided by the government.
2. Workshop and seminars should be organized for the lecturers of electrical and electronic in technical institutions in order to build their capability and capacity.
3. All the skills identified in the study should be integrated and incorporated into the module to train electrical and electronic students

5.6 Suggestion for Further Study

The following are suggested for further studies:

1. Capability and capacity building in lecturers, and instructor of electrical and electronic for effective teaching on entrepreneurship skills in Niger state.
2. Entrepreneurship skills needed by student for establishing solar power enterprise in Kara state.
3. Entrepreneurial skills needed by craftsmen for establishing small scale enterprise in electrical and electronic in other states.

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APENDICES

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

QUESTIONNAIRE ON GAP ANALYSIS OF ENTREPRENEURSHIP SKILLS NEEDED AND POSSESSED BY ELECTRICAL AND ELECTRONIC GRADUATES FOR SOLAR POWER INSTALLATION IN TECHNICAL INSTITUTION IN NIGER STATE.

INSTRUCTION: This research work on gap analysis of entrepreneurship skills needed and possessed by electrical electronic graduates for solar power installation in technical institution in Niger state.

Be as honest as you can, all information provided will be highly confidential and strictly used for the purpose of the research Kindly complete the questionnaire by ticking the column (√) that represents your perception about the work.

PART 1

SECTION A :Personal Data.

- ★ Electrical Electronic lecture ( )
- ★ Solar installer ( )

PART 2

INSTRUCTIONS: Below is a list of statements to ascertain your opinion on the entrepreneurship skills needed by graduates for solar power installation in technical institution Niger state.

SECTION B

Kindly complete this section using the response categories provided by ticking the column [] that represent your perception about the topic using [4] point rating scale.

Highly Needed [HN]

Needed [N]

Somehow Needed [SN]

Not Needed [NN]

What are the entrepreneurship skills needed by electrical electronic graduates for solar power installation?

S/N	Items	HN	N	SN	NN
1	Ability to use the right tools for the right job				
2	Ability to troubleshoot				

3	Ability to Install and servicing skill				
4	Ability to use up-skilling skill				
5	Ability to use appropriate personal protective equipment [ppe]				
6	Ability to use Computer literacy skill				
7	Ability to use analytic skill				
8	Ability to use critical thinking skill				
9	Ability to use effective communication skill				
1o	Ability to use Observatory skill				
11	Ability to use Managerial skill				

SECTION C

Kindly complete this section using the response categories provided by ticking the column [] that represent your perception about the topic using [4] point rating scale.

Highly Possessed [HP]

Possessed [P]

Somehow Possessed [SP]

Not Possessed [NP]

What are the entrepreneurship skills possessed by electrical electronics graduates for solar power installation.

S/N	Items	HP	P	SP	NP
12	Ability to use the right tools for the right job				
13	Ability to troubleshoot				
14	Ability to Install and servicing skill				
15	Ability to use up-skilling skill				
16	Ability to use appropriate personal equipment [ppe]				
17	Ability to use Computer literacy skill				
18	Ability to use analytic skill				

19	Ability to use critical thinking skill				
20	Ability to use effective communication skill				
21	Ability to use Observatory skill				
22	Ability to use Managerial skill				

SECTION D

Kindly complete this section using the response categories provided by ticking the column [] that represent your perception about the topic using [4] point rating scale.

Strongly Agree [SA]

Agree [A]

Somehow Agree [SA]

Somehow Disagree [SD]

What are the strategies for improving electrical and electrical graduates on entrepreneurship skills possessed for solar power installation.

s/n	Items	SA	A	SA	D
23	Up-skilling				
24	Re-skilling				
25	Attending workshops and semminers				
26	Use of e-marketing				
27	Ability to notice economic changes				
28	Ability to motivate staff				
29	Creative imagination				