

Industrial Training in Technology and Vocational Education: Students' Attitude and Way Forward

¹Shosanya Ibrahim Olawale; ²Joshua Emmanuel Temiloluwa; ³Abawonse Boluwatife Paul; ⁴OlalekanLawrence Adeyinka
⁵Igbalajobi Ayodeji Tajudeen; ⁶Oluwatunbi Blessing Olalekan; ⁷Oladapo David Oriyomi; ⁸Dr. MosesIkebe Odo
University of Lagos, Nigeria

TABLE OF CONTENT

Title Page	3179
Table of Content	3180
List of Tables	3181
Abstract	3182

CHAPTER ONE INTRODUCTION

<i>A. Background of the Study.</i>	3183
<i>B. Statement of Problem.</i>	3185
<i>C. Purpose of the Study.</i>	3185
<i>D. Significance of the Study.</i>	3185
<i>E. Research Questions</i>	3185
<i>F. Scope of the Study.</i>	3185

CHAPTER TWO REVIEW OF RELATED LITERATURE

<i>A. Concept of Technology and Vocational Education.</i>	3186
<i>B. Problems of manpower production in Technology and Vocational Education.</i>	3187
<i>C. Concept of Students Industrial Work Experience Scheme (SIWES).</i>	3188
<i>D. Need for Technology and Vocational Education Students' Industrial Work Experience.</i>	3189
<i>E. The Roles of Students Industrial Work Experience Scheme in Vocational and Technical Education.</i>	3190
<i>F. Challenges Facing SIWES in Technology and Vocational Education Program.</i>	3190
<i>G. The concept of Attitude towards learning.</i>	3191
<i>H. Summary of Reviewed Related Literatures.</i>	3193

CHAPTER THREE RESEARCH METHODOLOGY

➤ Introduction.	3194
➤ Research Design.	3194
➤ Population of the Study.	3194
➤ Sample and Sampling Technique.	3194
➤ Research Instruments.	3194
➤ Validity of Research Instruments.	3194
➤ Reliability of Research Instruments.	3194
➤ Technique of Data collection.	3194
➤ Method of Data Analysis.	3194

CHAPTER FOUR DATA ANALYSIS, RESULTS AND DISCUSSION

➤ Introduction	3195
➤ Presentation and Interpretation of Analysed Data	3195
➤ Findings.	3198

CHAPTER FIVE DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATION

A. Discussion.	3200
B. Conclusion.	3200
C. Recommendations.	3200
D. Suggestions for Further Studies.	3201
E. Limitations of the Study.	3201

REFERENCES	3202
-------------------	------

APPENDIX	3204
-----------------	------

LIST OF TABLES**Table Title**

Table 1	Gender Distribution	3195
Table 2	Trade-area Distribution.	3195
Table 3	Gender-Trade area Cross-tabulation	3195
Table 4	Mean and Standard Deviation of participants' Responses on the Attitude Scale	3195
Table 5	t-test Result of Influence of Gender on TVE Students' Attitude towards SIWES	3197
Table 6	ANOVA Result of Influence of Trade-areas on TVE students' Attitude towards SIWES	3197
Table 7	Mean and Standard deviation analysis of students' responses on ways of improving TVE Students' Attitude towards SIWES	3198

ABSTRACT

The Students Industrial Work Experience Scheme (SIWES) is a vital component of Technology and Vocational Education (TVE) programs, designed to bridge the gap between theoretical knowledge acquired in classrooms and real-world applications in various industries. This study aims to explore the attitudes of TVE students towards SIWES and identify factors such as gender and trade-area influencing their perceptions. The research employed a structured questionnaire, the questionnaire included items assessing students' perceptions of SIWES in cognitive (what they think about it), affective (how they feel about it), and behavioral (how they react to it). The findings demonstrated that TVE students had low understanding of the usefulness of SIWES (Cognitive), as such had low preference in terms of self-confidence, motivation (Affective), hence, the students most likely did not make the best out of SIWES. Students also expressed concerns about gender inequality in terms of learning opportunities. Furthermore, the study uncovered various strategies agreed upon by students to enhance their attitudes towards SIWES, including clearer guidelines, pre-SIWES orientation programs, mentorship opportunities, regular feedback, and team-building activities. This research contributes to the understanding of students' attitudes towards SIWES within the context of TVE and offers valuable insights for educators, policymakers, and stakeholders in designing interventions to optimize students' experiences during the program. The findings underscore the importance of addressing gender related disparities and tailoring SIWES to meet students' specific needs, ensuring the program's effectiveness as a bridge between academic knowledge and practical skills in the dynamic world of technology and vocational education.

CHAPTER ONE INTRODUCTION

A. Background of the Study

The purpose of technical and vocational education is to familiarize students with the practical skills and essential scientific knowledge necessary for the country's technological progress and sustainability. In Nigeria, prior to the establishment of technological and vocational education, informal apprenticeship was practiced during the pre-colonial era, where parents would instruct their children in the necessary skills to maintain the continuity of the profession. Technical and vocational education can be described as instruction that merges theoretical knowledge with practical application. In essence, it is a form of education that integrates teaching and hands-on training aimed at enabling individuals to carry out physical or technical tasks through the specific skills acquired from education and training. Therefore, it is inappropriate to have vocational/technical institutions without facilities for practical training. According to Abdulrahman (2013), technological and vocational education encompasses structured programs of courses and learning experiences that lead to career opportunities after obtaining the necessary basic academic and life skills required in the labor market. It is inaccurate to claim the existence of technological and vocational education if students are not acquiring the relevant job skills, as this form of education gives students the chance to develop practical skills for employment in various trade, craft, and economic sectors. UNESCO, as cited in Ekpeyong (2011), defines technological and vocational education as an element of the educational process involving the study of technology and related sciences, as well as the acquisition of practical skills, attitudes, understanding, and knowledge related to occupations in various economic sectors. Technological and vocational education and training represent continuous learning that prepares individuals for the labor market through the acquisition of applicable and enduring skills. Barbados (2018) explained that technology and vocational education and training encompass all programs and courses that contribute to the development of knowledge, technical skills, attitudes, and essential skills for competitiveness in the workforce. Uwaifo (2009) defined technological and vocational education as the training of technically oriented personnel to be initiators, facilitators, and implementers of the nation's technological development. It can be described as an aspect of education focused on preparing a skilled workforce, aiming to develop students to become productive, employable, or self-employed according to Idialu (2007). Technology and vocational education also provide opportunities for all types of learning and aim to provide the skilled workforce required by individuals to utilize complex technologies. Creating an enabling environment for teaching and learning of technology and vocational education in schools is essential to ensure quality teaching and learning environment to help students meet academic standards. This comes as a response to the need for increased quality of teaching and examinations as graduates from these programs often struggle to find adequate employment, leading to increased unemployment and poverty. The overall goal of quality teaching and learning is to create an opportunity for high-quality learning that is assessed over time through performance.

At the university level, technology and vocational education programs include technology education, business education, and home economics education. Regarding technological education, there are options such as Construction/wood technology and Automechanics/mechanical, electrical, and electronic technology. Business education includes programs like secretarial education/office technology management, accounting education, cooperative economics, and management education. Other programs in technology and vocational education include home economics and agriculture, which offer opportunities necessary to create self-sufficient individuals. Technology and vocational training are essential for creating jobs for Nigeria's team population (Nigerian Universities Commission, NUC, 2008).

Technology and vocational education programs are designed to equip students with relevant practical skills to integrate into the workforce, requiring the incorporation of a work experience scheme similar to the one available in faculties of Engineering and Environmental Science programs. This is why Technology and Vocational education are the only programs at the Faculty of Education that are involved in the Students' Industrial Practice Scheme. Students' Industrial Work Experience Scheme (SIWES) is a program intended to prepare university students for the industrial work situation they are likely to face after graduation, according to Oyeniyi (2011). Work experience is an educational program in which students participate in work activities while attending school, as stated by Oyedele in Ukwueze (2011). The introduction of the Student Industrial Work Experience Scheme (SIWES) is a significant reform in Nigerian higher education and includes on-the-job learning activities that every university student must complete during schooling in the fields of management science, business, technology, and vocational education (Akerejola, 2008; Olugbenga, 2009). The SIWES is a six-month on-site training program designed to expose students to the real-life technical and soft skills required to enter the job market after graduation (Industrial Education Fund, 2013).

The SIWES was established by the Industrial Training Fund's policy document No. 1 of 1973, which outlined the objectives of the scheme. The objectives include:

- Allowing students in higher learning institutions to gain industrial skills and experience relevant to their field of study.
- Equipping students for the industrial work environment they are likely to encounter after graduation.
- Familiarizing students with work methods and techniques for handling equipment and machinery that may not be accessible in their institutions.
- Facilitating the transition from school to the professional world and expanding students' network for future job opportunities.

- Offering students the opportunity to apply their knowledge in real work settings to bridge the gap between theory and practice.
- Engaging and reinforcing employers' participation in the entire educational process through SIWES.

The objectives of SIWES are aimed at providing industries the opportunity to supplement the educational efforts of schools by allowing students to gain practical hands-on experience using industry facilities that are directly related to their areas of study, which may not be available in schools. It has always been challenging for technical and vocational students to secure training placements due to intense competition from students in other fields. Unfortunately, many technical and vocational students do not take this training seriously. Azubuike (2013) reports that around 60% of industrial training students fulfill their obligations at their placements, while 30% end up in organizations that are unrelated to their fields of study, and the remaining 10% simply seek a better placement for their industrial training. This lack of commitment has a detrimental effect on the development of students' practical and intellectual skills. The indifference of technical and vocational education students towards SIWES may stem from their attitudes towards the program. Attitude refers to an individual's consistent tendency to react positively or negatively to things, people, or events in their environment. It is influenced by an individual's experiences and interpretations and affects their specific behaviors and opinions. A person's attitude reflects their emotions, way of thinking, and behavior. According to Allport (2005), the concept of attitude is fundamental to social psychology, and Allport (2008) emphasized its importance in personality psychology. Furthermore, students' attitudes not only influence their academic performance but also impact their skill acquisition. Gender can also shape attitudes in various ways, as men and women may hold differing attitudes towards social and political issues. Women may tend to have positive attitudes towards communal values such as empathy and cooperation, while men may lean towards positive attitudes regarding individualistic values such as self-reliance and competitiveness.

Gender has the potential to greatly impact attitudes, shaping the beliefs and values of individuals and influencing how these attitudes are expressed and perceived in society. There are several ways in which gender can influence attitudes, including:

➤ *Socialization:*

Individuals are socialized in distinct ways depending on their gender from a young age, impacting their perspectives regarding different matters. This can influence attitudes towards areas such as leadership, caregiving, and self-expression. For instance, boys might be urged to display competitiveness and assertiveness, whereas girls could be taught to demonstrate nurturing and empathy. These predefined gender roles can significantly shape one's viewpoints.

➤ *Stereotypes:*

Gender stereotypes can influence attitudes, affecting how individuals perceive others and themselves; for instance, beliefs about women being emotional and men being aggressive can impact attitudes toward emotional expression and conflict resolution.

➤ *Power Dynamics:*

The influence of gender on power dynamics can impact perspectives on social justice, inequality, and discrimination. For instance, individuals in positions of power or privilege might be less inclined to acknowledge the experiences of marginalized groups.

In terms of specific subjects, for instance, learners in education might hold a more favorable outlook on learning compared to those in engineering and environmental science. Furthermore, attitudes toward specific topics may differ based on the subject area. For example, the views on using machinery in a Technology and Vocational Education workshop could vary between students studying environmental science and those studying engineering. According to Pennycook and Rand (2019), the presentation of information and the particular topic being discussed can significantly impact a person's attitudes. When individuals are presented with positive information about a specific product or service, their attitude toward that product may become more positive. According to Reid and Hogg (2006), exposure to negative information about a certain group of people can lead to a more negative attitude towards that group. The subject matter can influence attitudes through emotional appeals. If information is presented in a manner that evokes strong emotions such as fear, anger, or excitement, it can impact attitudes towards the topic under discussion (Valentino et al., 2004). Subject matter can also influence attitudes through social or peer influence. As noted by Jetten et al. (2020), when an individual's social circle holds a particular attitude towards a specific subject, that individual is more likely to adopt the same attitude to fit in with their group. Therefore, administrators and researchers in higher education should carefully consider the potential impact of student training programs on skill development, which ultimately has a direct effect on national development goals. The Student Industrial Experience Program (SIWES) is a skills training program aimed at familiarizing tertiary students with the industrial work environment they are likely to encounter after graduation (Akerejola, 2007). This program provides students with basic experience in handling equipment and machinery that is not typically available at their educational institutions. The Students Industrial Work Experience Scheme (SIWES) is a program designed to equip students with work skills, methods, and processes in the industry (ITF, 2007). According to Osinem and Nwoji (2010), the students' industrial experience program is intended to prepare university students for the work environment they will face after graduation. The scheme offers students an opportunity to become acquainted with tools, equipment, and machinery that are not available at their respective institutions but will be utilized in their future careers. It exposes students to work methods and prepares them for safety measures in the workplace. The Department of Technology and Vocational Education at the University of Lagos comprises three distinct cohorts: Technology Education, Home Economics Education, and Business Education. Each course must be completed over a period of four (4) years. Students in the

Department of Technology and Vocational Education partake in a six-month industrial training course known as SIWES during the second term of their third year. Given this, it is pertinent to study the attitudes of technology and vocational education students towards the industrial work experience scheme, specifically within the Department of Education at the University of Lagos.

B. Statement of Problem

Technology and vocational students participating in the SIWES program play a crucial role in Nigeria's education system and are an important workforce contributing to the country's economic development. SIWES aims to provide students in higher education institutions with opportunities to gain practical industrial skills relevant to their studies, which they may not have access to within their schools. This will allow them to contribute to the nation's growth. Unfortunately, it's disheartening to note that these objectives have not been met. Many students, particularly at the University of Lagos, face challenges such as difficulty in securing placements, lack of punctuality, irregular attendance, and displaying arrogant behavior in the workplace, which hinders the success of the SIWES program. These persistent issues during industrial training will continue to impact skill acquisition goals and create additional challenges for the country. Given the important role of technology and vocational training and their impact on various sectors, finding a solution to address these issues is crucial. This research investigates the attitudes of University of Lagos' Technology and Vocational Education students towards industrial training programs.

C. Purpose of the Study

The purpose of the study is to determine the Technology and Vocational Education students' attitude towards Students Industrial Work Experience Scheme in the University of Lagos.

➤ *Specifically, this Study sought to Find out the:*

- Attitudes of Technology and Vocational Education students toward Student Industrial Work Experience Scheme.
- Influence of gender on students' attitude towards Student Industrial Work Experience Scheme.
- Influence of trade area on students' attitude towards Student Industrial Work Experience Scheme.
- Scheme.
- How to improve students' attitude towards Student Industrial Work Experience Scheme.

D. Significance of the Study

The research will greatly benefit the SIWES Coordinator, SIWES students, and the industry. It will provide valuable guidance to the Student Industrial Work Experience Scheme (SIWES) Coordinating Committees at the University of Lagos on how to effectively motivate and engage students and give them the necessary orientation to actively participate in the training program. The findings of the study will be valuable to technology and vocational education students as it will motivate them to actively participate and behave well during SIWES, enabling them to gain essential knowledge and skills to become independent and competent employees or entrepreneurs after graduation, fostering positive contributions to society. Additionally, the study will promote collaboration between industries and the recruitment of technology and vocational students, equipping them with relevant skills that will not only reduce unemployment but also foster economic development, subsequently enhancing skills acquisition and workforce development in the country.

E. Research Questions

- What is the attitude of Technology and Vocational Education students toward Student Industrial Work Experience Scheme?
- What is the influence of gender on students' attitude towards Students Industrial Work Experience Scheme?
- What is the influence of trade areas on students' attitude towards Students Industrial Work Experience Scheme?
- In what ways can students' attitude be improved towards Students Industrial Work Experience Scheme?

F. Scope of the Study

The study is geared towards finding Technology and Vocational Education Students' Attitude towards Students Industrial Work Experience Scheme. The research was carried out amongst students in University of Lagos. The study was restricted to 400 level students of the department of Technology and Vocational Education. This is because they are the only Faculty of Education Students that have gone out for the Students Industrial Work Experience Scheme.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter contains the reviews of related literatures that were found relevant to this study on Technology and Vocational Education students' attitude towards Students Industrial Work Experience Scheme. The review was carried out and organized under the following subheadings:

- A. *Concept of Technology and Vocational Education.*
- B. *Problems of manpower production in Technology and Vocational Education.*
- C. *Concept of Students Industrial Work Experience Scheme (SIWES).*
- D. *Need for Technology and Vocational Education Students' Industrial Work Experience.*
- E. *The roles of Students Industrial Work Experience Scheme in Technology and Vocational Education.*
- F. *Challenges facing SIWES in Technology and Vocational Education Program.*
- G. *The concept of Attitude towards learning*
- H. *Summary of Reviewed Related Literatures.*

A. *Concept of Technology and Vocational Education*

Education focused on preparing individuals for specific occupations is known as technological and vocational education. There is a growing awareness of the importance of technology and vocational education nationwide. This increased societal interest has led to calls for changes in the structure and delivery of technology and vocational education programs to highlight a new focus on technology and engineering initiatives. The primary goal of technological and vocational education is to cultivate not only practical skills but also attitudes and behaviors that foster creativity, innovation, and resourcefulness in the learner. This type of education occurs under public oversight and control, often in schools or classrooms, and is designed for initial or further training. Vocational education originally emphasized teaching skills and promoting skilled manual work. Furthermore, technological and vocational education involves an ongoing process of adjusting the training of workers to meet the minimum knowledge requirements. Its focus is on achieving results, driving technological advancements, and ensuring a fresh pool of skilled workers while offering continuous training to those already qualified to keep pace with modern work practices.

➤ *Historical Development of Technology and Vocational Education in Nigeria.*

It's important to keep in mind the following text: TECHNOLOGY and vocational education, due to its intricate nature and adaptability to new technologies, is an essential tool for preparing the workforce needed for national development in any country. This type of education revolves around using tools and equipment to process materials and create products with economic value. It also includes offering services in home economics, health professions, and other related fields. Given these points, technology and vocational education play a crucial role in driving national development. In Nigeria, during the colonial era, technology and vocational education were not highly regarded within the missionary school system. The focus of education was largely academic, resembling the education system in many former British colonies. For nearly a century, the educated individuals in Nigeria predominantly studied classical subjects like Latin, Greek, and the works of literary figures such as Milton and Shakespeare. The early scholars in Nigeria were mainly known for their literary knowledge and "great book learning" (Fafunwa, 1995). Many attribute this unfortunate situation to the influence of missionary education in Nigeria, which primarily aimed at training catechists and officials. Until 1909, the formal education curriculum in Nigeria did not include any vocational skills training programs. It was only in 1909 that vocational education programs were introduced in the country, with the establishment of Nassarawa School in the north, which had a technical wing teaching leatherwork, carpentry, blacksmithing, weaving, and bookbinding. Similarly, the Hope Waddell School Institute, established in 1895, had a technical wing where students learned tailoring, carpentry, and other trades, marking these institutions as pioneers in vocational education (Nduka, 1982). Other early efforts to promote vocational education in Nigeria included the Boys' Vocational School in the 1940s in Akwa Ibom State, which trained teachers in various trades using local raw materials, and the Blaize Memorial Industrial School in Abeokuta, which ran a youth vocational program. These were the developmental trends in vocational education during the missionary era between the late 1800s and 1909. In 1925, the Memorandum on Educational Policy in British Tropical Africa urged governments to take a more active role in providing technological education, which required expensive equipment and properly qualified personnel (Nduka, 1982). Building on this, the government established business centers and technical institutions, an example being the Yaba Higher College, founded in 1934 (Nduka, 1982; Okoro, 1993; Imarhiegebe, 2003). During the period under review, technological and vocational education in Nigeria was provided by governmental, business, and industrial organizations. The memorandum also recommended that the government create a department to train technicians essential for national development. Government contributions to the development of technology and vocational education in Nigeria included the Department of Public Works, the Department of Posts and Telegraphs, the Department of Agriculture, the Nigerian Railways, and various commercial and industrial enterprises. After the official opening of Yaba Higher College, the initial students were offered courses in engineering, medicine, education, and agriculture. The 1946 Ten Year Development Plan proposed the expansion of technical education, which led to the establishment of 14 craft centers in the North, 9 in the East, and 2 in Lagos. The education offered at Yaba College mainly centered around technology and vocational training, ultimately leading to the conferment of university degrees. In 1946, a ten-year development plan was formulated to improve the

welfare of Nigerians, recommending the expansion of technological and vocational education to meet the demand for technicians and artisans.

In 1952, there were three technical institutions located in Yaba, Enugu, and Kaduna and seven trade centers and eighteen craft centers distributed throughout the country. Nigeria's first College of Arts, Science and Technology was established in Zaria in 1953. Following this, similar colleges were established in Enugu and Ibadan. These colleges offered courses in mechanical, electrical and civil engineering, telecommunications, and agriculture. Unfortunately, the Nigerian College of Arts, Science and Technology was not in operation for long. In 1960, the publication of the Ashby Commission Report led to the establishment of universities in the northern, eastern, and western regions of the country. The University of Nigeria, Nsukka in the East offered the first structured program of technological and vocational education in West Africa. Furthermore, the Commission's report recommended the introduction of technical courses in secondary schools and three levels of technical education in the country, specifically: preparation for secondary schools at the pre-professional and pre-technical levels, training of artisans for technical colleges, trade centers, and vocational schools, as well as technical training for polytechnics and universities (Nduka, 1982, Okoro, 1993 and Fafunwa, 1995). In 1977, the Federal Government of Nigeria published the first national policy on education. Since its inception, the policy has emphasized the advancement of technology and vocational education in the country. The current version of this policy (Federal Republic of Nigeria, 2004) aims to achieve five objectives that highlight Nigeria's technological development and addresses prevailing economic challenges. In order to strengthen vocational education to meet these objectives and oversee its endeavors to ensure quality learning, the government has established quality assurance bodies. These bodies include the National Commission for Colleges of Education (NCCE), the National Board for Technical Education (NBTE), and the National Universities Commission (NUC). Each body has set minimum standards for use by training institutions.

B. Problems of Manpower Production in Technology and Vocational Education Programme

Education in Technology and Vocational Training involves improving the quality of human resources in technology to create a skilled and independent workforce, including craftsmen, technicians, and technologists at a national level. Technology and Vocational Education (TVE) has become an important strategy for developing the workforce in Nigeria to train and modernize technical professionals and citizens, aiding in rapid industrialization, national progress, the elimination of unemployment, and alleviating poverty. Nevertheless, there are various barriers impeding the achievement of the program's objectives. These barriers consist of:

➤ *Institutional Leadership and Priority:*

Most of the technical and vocational schools in Nigeria are led or managed by individuals who do not have a technical or vocational background, which is a well-known fact. Consequently, their focus is directed away from the advancement of technical and vocational education. The funds that are available are redirected to other areas, leading to the neglect of this particular aspect of education. Furthermore, effective leadership is essential for the success of any educational initiative. Boateng (2012) emphasized that efficient and effective leadership leads to the creation of appropriate policies, the establishment of relevant objectives, the implementation of strategic programs, and the establishment of effective program monitoring and evaluation measures to achieve the desired outcomes.

➤ *Inadequate Funding:*

The technology and vocational education program in Nigeria faces numerous challenges, mainly stemming from inadequate funding. Insufficient funding results in a lack of workshops, laboratories, teaching facilities, and necessary infrastructure to support the teaching and learning process. UNESCO (2003) pointed out that the inadequate funding leads to poorly equipped laboratories and workshops in schools, outdated and damaged equipment that is not replaced or repaired. Additionally, technology and VET teachers in Nigeria receive little attention and lack incentives, as noted by UNESCO-UNEVOC (2012). These issues significantly impact the attainment of goals and objectives in technology and vocational education in Nigeria, particularly in realizing the national technology goal.

➤ *Lack of Collaboration with Industries:*

One of the key challenges facing technology and vocational education in Nigeria in the 21st century, as stated by Uwaifo (2010), is the lack of strong collaboration between educational institutions and the industry. There is no agreement between technical and vocational education institutions and the private sector that VTE teachers should undergo internships in industries to gain new skills and knowledge, which would enable them to enhance their ability to impart job skills. The same holds true for students in these programs who need practical on-the-job training. Furthermore, establishing this partnership will significantly contribute to developing curricula that align with industry needs, ensuring that graduates of technology and vocational education programs possess practical and relevant skills.

➤ *Poor Practical Skills:*

The majority of technical and vocational training instructors are university graduates, lacking sufficient experience and training in the field. While they excel in theory, their practical skills are lacking. It is a challenge for these instructors to produce competent graduates. The quality of training is subpar, with an unnecessary focus on theory and certification rather than skill development and competency assessment. Inadequate training of instructors, obsolete equipment, and lack of instructional materials collectively

diminish the effectiveness of training in meeting required standards. However, high-quality skills training necessitates proficient instructors, appropriate workshop equipment, ample training materials, and student practical experience.

➤ *Poor Societal Perception:*

Throughout the evolution of technological and vocational education from its early stages to the 21st century, this particular area of education has been undervalued by both individuals and society (Audu et al, 2013). Technological and vocational education is often seen as a last option for those who are unable to get into a university or pursue their desired course. Governments often portray TVET as a way to keep early school leavers off the streets and those who cannot proceed to higher levels of education from the primary and secondary school system. They should instead promote this type of training as an effective strategy for providing skilled labor for the labor market and businesses. In Nigeria, there exists a division among universities, polytechnics, and colleges of education, further contributing to the low status of technical and vocational education. This is a concerning issue that hinders the growth and development of the nation. In Nigerian society, there is a prevalent disregard for teachers and professionals in the field of technology and vocational education. They are often viewed as individuals from a lower social class and are not expected to succeed. This mindset continues to discourage individuals from choosing technological and vocational education. Rather than acquiring technical skills and becoming self-sufficient, many prefer to remain unemployed and wait for paid employment.

➤ *Lack of Proper Monitoring and Evaluation:*

The program lacks appropriate monitoring and evaluation processes to assess if the program's goals have been met and to offer potential solutions. Consequently, there are minimal efforts to connect program graduates with job opportunities in the community, and there is also a lack of engagement with the private sector to help evaluate the performance of graduates.

➤ *Education and Retention of Staff:*

The education of academic staff usually involves ongoing training to ensure a continuous improvement in the quality of their work. It is important to provide training for achieving a minimum teaching qualification and for further professional development. However, it has always been challenging to retain interns in government ministries or areas where their skills are needed. As a result, many who have the opportunity to receive training abroad do not return to the country after completing their studies. Additionally, the salaries and benefits for technology and vocational education teachers in Nigerian institutions are among the lowest in the world. This has led to qualified personnel in some tertiary institutions moving to other countries, particularly the United States of America (Uwaifo, 2010). UNESCO (2012) highlighted that Nigerian TVET faces numerous challenges, including undervaluation of teachers and a lack of incentives for them. The current curriculum used in Nigerian TVE programs needs to be overhauled because it emphasizes theoretical classes over practical content. Furthermore, it is based on a foreign model that cannot be easily replicated in developing countries, lacks experienced teaching and support staff, does not have enough relevant textbooks, and is considered too academically focused at the expense of basic engineering and technology (Uwaifo, 2010).

C. *Concept of Students Industrial Work Experience Scheme (SIWES).*

The scheme called Students Industrial Work Experience Scheme (SIWES) is an organization that provides human resource development. This organization gives university students the opportunity to learn about working processes in their respective fields (ITF, 2003). SIWES aims to give university students practical skills and knowledge necessary for them to seamlessly transition into the workforce. Osinem and Nwoji (2010) reported that the central objective of the program was to obtain and strengthen the involvement of employers in the educational process of preparing students for work. The objective of this scheme is to promote the much-desired technological know-how for the development of the nation along with the development of skilled and articulate human resources required for a self-sustaining economy. In implementing the ITF's Industrial Training Fund Policy, the ITF identified a lack of practical skills among locally trained engineers and technologists over several years in the industry (ITF, 2003), the ITF Fund noted a serious gap between theory and practice. In practically oriented courses in almost all Nigerian institutions of higher learning. It was intended to bridge the identified gap between theory and practice in engineering and technology in tertiary institutions. The ITF initiated the Students Industrial Work Experience Scheme (SIWES) in 1973. According to Mafe (2010) participation in the program today includes Science, Engineering, Technology a Vocational education, environmental studies and agriculture programs at universities and Polytechnic. SIWES covers NCE programs in technical education, agricultural education, Entrepreneurship Education, Fine Arts and Design, Computer Education and Home Economics Education. Regarding the duration of SIWES, the ITF (2003) stated that university students reading the relevant courses have a six-month industrial attachment at the end of their third year, fourth year and fifth year depending on the programme. Polytechnic and College of Technology students on the National Diploma Program in their respective courses have four months of industrial attachment at the end of their first year, while college students have four months of industrial attachment at the end of their second year. Preparatory students and graduate students are not eligible.

➤ *Nature and Scope of Students Industrial Work Experience Scheme (SIWES)*

No community can move forward effectively without supporting its young people in gaining the essential hands-on skills. These skills enable them to utilize the resources available to address the requirements of the community. Practical knowledge involves application. As per Ochiagh (2005), practical knowledge is a form of learning that is indispensable for achieving expertise in a particular area of knowledge. Practical knowledge encompasses the acquisition of skills using tools or equipment to carry out tasks related to a specific field of study. SIWES is a program for developing skills, aiming to prepare university,

polytechnic/monotechnic, and college students for the transition from academic study to the professional sphere (Akerejola 2008). The Student Industrial Work-Experience Scheme (SIWES) is a structured training initiative with well-defined educational and career objectives, intended to enhance the professional capabilities of the participants. It is a mandatory program for all students in tertiary institutions in Nigeria pursuing courses in "specialized engineering, technical, commercial, applied sciences and applied arts" (ITF, 2004). According to Oyedele (1990), work experience refers to an educational program in which students engage in work-related activities while attending school. This work experience program grants students the opportunity to participate in a real work environment apart from the classroom setting. SIWES is a collaborative Industrial Internship Program involving higher education institutions, industry, the Federal Government of Nigeria, the Industrial Training Fund (ITF), the Nigerian Universities Commission (NUC), and NBTE/NCCE in Nigeria. SIWES is an integral part of the approved minimum academic standards in these institutions. SIWES is a compulsory academic prerequisite carrying six (6) credit units. All students in the Department of Technology and Vocational Education must fulfill this requirement before graduation, and it is also mandatory at the National Diploma (ND) level. The government has acknowledged the significance of SIWES through the establishment of the Industrial Training Fund (ITF). The ITF was constituted in 1971 and was tasked with the development and training of human resources. Following the establishment of the ITF, SIWES commenced in 1974 with the aim of making education more pertinent and closing the wide gap between theory and practical application in technology and vocational education, engineering, science, and other related fields in Nigerian tertiary institutions.

➤ *Brief History of SIWES*

The Student Industrial Work Experience Scheme (SIWES) was established in 1973 by the federal Military government under the supervision of the Industrial Training Fund (ITF). It's been 45 years since the scheme was designed for technocrats. Initially, the ITF provided funding for the scheme during its early years. However, due to the increasing financial burden, the ITF discontinued its support in 1978. The Federal Government then transferred the scheme to the National Universities Commission (NUC) and the National Board of Technical Education (NBTE) in 1979. However, in November 1984, the federal government resumed control of the program at the ITF, and by July 1985, the ITF took over the program management, with full funding from the federal government. The program's purpose was to give students completing professional courses in higher education institutions real-world experience in a work environment, observing work ethics and methods. Today, the scheme encompasses numerous students and has become a prerequisite for the award of the Higher National Diploma and Diploma in specific fields in the country's higher education institutions. SIWES/Industrial training serves as an opportunity for university students to gain experience in their chosen professional field in the industry. In many undergraduate programs in Nigerian universities, polytechnics, and colleges, the motivation, responsibility, and insight gained through industrial training can greatly benefit students in their future careers. Okoye (2012) emphasizes that industrial training helps develop students' public relations, particularly for those who hadn't worked before entering higher education institutions. The advantages that students gain from industrial training, including exposure to the broader work environment, practical experience related to their courses, and financial competitiveness, provide an added advantage in their field. Therefore, the program is geared towards nurturing competent technocrats who can effectively contribute to the nation's progress in their respective fields. The primary aim of the system is to cultivate a skilled and organized workforce essential for building a self-sustaining economy in Nigeria. (Adapted from the Students Industrial Work Experience Scheme job specifications).

D. Need for Technology and Vocational Education Students' Industrial Work Experience.

Theoretical knowledge by itself is not usually sufficient to prepare an educated individual for the professional world. A worker or productive person needs to not only be knowledgeable but also adaptable in applying skills to carry out specific tasks. This reality can be demonstrated using a simple analogy. While it is possible for someone to learn and absorb all available information about driving a car in a classroom, it is unlikely that they would be able to drive a car successfully based solely on this knowledge. On the other hand, another person with no theoretical knowledge of how to drive a car, after being instructed and given practical training and supervision, could ultimately drive a car successfully. Someone who has both theoretical knowledge and practical experience would likely be a better driver (Mafe, 2009). As a result, there are two fundamental forms of learning – education and training – both of which are essential to the functioning of today's society and the productive world of work. In the analogy, the first individual had extensive education on how to drive a car, the second person received sufficient training on how to drive a car, and the third person had the advantage of combining theoretical knowledge with practical skills to become a better driver. This necessity to combine theoretical knowledge with practical skills to produce results in the form of goods and services or to be productive is at the core of industrial training. Both education and training are crucial: effective education cannot exist without certain elements of training, and effective training cannot exist without certain elements of education. A productive individual, especially in this era, must be able to combine and utilize the results of both forms of learning - Know-How Ability and Do-How Capability - to produce goods and services. This requirement is particularly important for individuals pursuing careers in Vocational, Technical Sciences and Technology (VEST). As we are in a period of commercial and industrial change, our education sector needs to undergo corresponding changes to contribute to economic survival. Therefore, the government is the administrator of education policy in Nigeria in response to concerns about the quality of graduates of tertiary institutions, which led to the initiation of Industrial attachment or SIWES. During the vocational training period, Tertiary students in Technology and Vocational Education undertake work experience. The SIWES program was introduced by the Industrial Training Fund (ITF) in 1973 to address concerns regarding the employable skills of graduates in the labor market. Against this backdrop, the Industrial Education Fund established SIWES in 1974 to provide real work experience to undergraduates of vocational, engineering, science, and technology courses to help them acquire relevant skills.

E. The Roles of Students Industrial Work Experience Scheme in Vocational and Technical Education

The collaboration between industries and tertiary institutions, including technical colleges, known as the Students Industrial Work Experience Scheme (SIWES), is an integral part of the training program for technical institution students. SIWES aims to prepare students for the practical aspects of their future careers by providing a platform for cooperation between technical institutions and industries. According to ITF (2002), SIWES is a skills training program designed to equip students of various tertiary institutions with the necessary practical experience for their future industrial work placements. Additionally, the scheme provides students with exposure to equipment and machinery that may not be readily available in their institutions. Adebayo (2005) and NCCE (2008) noted that SIWES offers technology students and student teachers the opportunity to gain firsthand experience in handling materials and machines, which may not be feasible within the confines of their educational institutions. Moreover, the scheme familiarizes students with work practices and instills a sense of responsibility for workplace safety. Nwoji (2003) emphasized the scheme's objective to involve and engage employers in the process of preparing students for the transition into the industrial work environment, with a focus on promoting technological expertise and cultivating a skilled workforce vital for a self-reliant economy. Before the establishment of the scheme, concerns were raised by Nigerian industrialists regarding the lack of practical training among graduates of higher institutions, making them ill-prepared for employment in industries (I.T.F, 2002 & Osimen and Nwoji, 2010). Employers contended that the theoretical education provided in higher institutions did not sufficiently prepare graduates for the demands of the labor market. According to Ahmed (2011), the introduction of SIWES aimed to bridge the gap between theory and practice for students studying engineering and related courses. The scheme plays a crucial role in ensuring the comprehensive development of our education system.

F. Challenges Facing SIWES in Technology and Vocational Education Program.

The industrial program in technology education has its positives, but its complete execution has been connected to similar problems that hinder diversity and effectiveness in achieving its goals (Adeaga 2013). According to Adeago (2013), some critical and extensive issues work against the full realization of the SIWES objectives: Most industrial workers possess practical knowledge but struggle to connect it with theory. There is a lack of awareness among educational authorities and industry. Training stations lack modern facilities and machines. The planning of SIWES program is improper. Lack of student supervision: some lecturers and IRF officials hardly visit students in the program. The duration of SIWES is too short, providing students with insufficient time to gain adequate experience covering extensive course content. Failure to evaluate the internship method in the SIWES program compromises quality, as students tend to choose establishments with little to offer by way of skills training. There is a lack of adequate feedback and follow-up services after detention to provide students with feedback on their experiences and skills acquired during detention.

➤ *SIWES Challenges in Technology and Vocational Education Partnership with Industry*

According to Oran (1992), Okorie (2000) and Okorie (2001), the challenges of school-industry partnership in Nigeria can be categorized under the following sub-headings:

- *Limited Number of well-Endowed Industries:*

The number of well-endowed industries that can accept technical education program students is very limited indeed. And the number of students for these few chances is increasing every year. Even so, some organizations for certain/unexplained reasons reject students sent to them for industrial training. One of the major problems facing proper training for the world of work is inadequate facilities for industrial attachment (Okorie, 2000). In a situation where these devices exist, many employers are concerned that many students lack the experience to handle some delicate machinery and tools without damaging them. A situation where students are allowed to see but not be allowed to use certain equipment does not provide the required experience needed to prepare them for industry or the world of work. In some cases, students had to search for places of attachment and occasionally ended up in places not relevant to their field of study/specialization, thus defeating the basic objectives of SIWES (Nwoji, 2003).

- *Lack of Interest from Industry and Institutional Staff to Supervise Industrial Work Experience:*

Staff who are supposed to go into industry to supervise students often do not do so. Employees appear to be more interested in the contribution to supervision than in the performance of supervision itself. Some collect students' diaries when those students return from industrial training and simply make up entries and sign (Okorie, 2001). The ITF operational guidelines state that students in industrial practice should be supervised by three separate officers, a subject supervisor, an institutional supervisor, and an industrial training fund supervisor. A supervisor from industry is expected to assess the students' progress on a weekly basis and make relevant comments in their diary. A supervisor is expected to visit the institution at least once a month and monitor the students' progress to ensure that the practical experiences they encounter are relevant to the course of study (Nwoji, 2003). An officer from the Industrial Education Fund is also expected to visit the student at least once during the work placement to ensure that they are participating in the program in areas relevant to their course of study. Students' lack of interest in industrial practice: It is often manifested by not providing adequate information, not participating in the orientation program and subsequent industrial training, not submitting logbooks, Form 8, and technical report, and not participating in the SIWES seminar. Many students don't take it too seriously either. Some see it as just a holiday job. They are the only ones who come for their monthly allowance regardless of the objectives for which the scheme was established (Nwoji, 2002). Failure to provide input to all staff: SIWES supervision involves multiple physical visits to organizations, a lot of initial preparation, data collection and documentation, monitoring and evaluation of staff, students and organizations, and compilation and processing of results and the services of other lecturers, heads of

departments/school principals are involved. Not all employees who participated in one way or another are paid. This therefore affects the effectiveness of the supervision exercise, as each lecturer should visit the annex about three times (Osinem, 1999).

- *The Inability of the School Coordination Department to Prepare list and Placement List on Time:*

This may be due to late registration of industrial training students, late provision of relevant information by students, insufficient staffing, and insufficient infrastructure and working tools. The requirements of the SIWES guidelines for this are usually violated. Applications are accepted with multiple duplications of names, matriculation/serial The following categories encompass the challenges of school-industry partnership in Nigeria, as stated by Oran (1992), Okorie (2000), and Okorie (2001):

- *Limited Number of well-Equipped Industries:*

There are very few industries capable of accepting students in technical education programs. Additionally, the number of students vying for these limited opportunities is increasing every year. Unfortunately, some organizations reject students sent to them for industrial training without clear reasons.

- *Inadequate Facilities for Industrial Attachment:*

The lack of proper facilities for industrial attachment hinders effective training for the world of work. Even when these facilities exist, many employers are hesitant to allow students to use delicate machinery and tools due to concerns about the students' lack of experience. Allowing students to observe but not use certain equipment does not provide them with the necessary experience for the industry or the world of work. Additionally, students often struggle to find appropriate attachment placements and sometimes end up in fields unrelated to their area of study, which defeats the core objectives of SIWES.

- *Students' Lack of Interest in Industrial Practice:*

Many students show a lack of interest in industrial practice by failing to provide adequate information, participating in orientation programs and subsequent industrial training, submitting required documentation, and attending the SIWES seminar. Some students view it merely as a holiday job, and they only participate to receive their monthly allowance, disregarding the scheme's established objectives.

- *Failure to Adequately Compensate all Staff:*

The supervision of SIWES involves multiple physical visits to organizations, extensive preparation, data collection and documentation, staff, student, and organization monitoring and evaluation, and the involvement of other lecturers, heads of departments, and school principals. However, not all staff members involved receive appropriate compensation. This lack of compensation affects the effectiveness of the supervision process.

G. The Concept of Attitude Towards Learning

Attitude pertains to an individual's viewpoints, convictions, and emotions towards something or someone. It denotes a predisposition to respond in a particular manner to a specific situation or object. Multiple factors can impact attitude, including prior experiences, cultural heritage, personal traits, and societal standards. According to Ajzen and Fishbein (2005), attitudes are an individual's evaluative assessments or emotions about an object, person, group, or circumstance. They can be positive, negative, or neutral and are influenced by various factors such as personal convictions, values, experiences, information, and the context in which they are shaped. Positive attitudes can lead to more productive behavior and favorable results, while negative attitudes can impede progress and result in failure in any educational pursuit (Dweck, 2006). A favorable attitude toward learning entails being driven, curious, involved, and enthusiastic about the learning process. Students with a positive attitude toward learning are more likely to take initiative in their studies, seek additional resources, and possess a growth-oriented mindset, believing that they can enhance and prosper through effort and determination. Conversely, a negative attitude toward learning involves being disengaged, lacking motivation, and uninspired by the learning process. Students with a negative attitude toward learning may struggle to find relevance or interest in engaging in activities and may fail to recognize the value of dedicating time and effort to their studies. Various factors can affect students' attitudes toward learning, including:

- *Gender:*

Gender can influence learning attitudes in different ways, which can impact learning and educational outcomes.

- *Subject:*

Different majors can elicit different attitudes in students depending on their interests and strengths.

- *Attitude Components*

An attitude is a mental and emotional state that influences an individual's behavior toward a particular object, person, or situation (Eagly and Chaiken, (1993). The three main components of an attitude are:

- *Cognitive Component of Attitude:*

References an individual's beliefs, thoughts, and understanding regarding a specific object, person, or situation. For instance, if an individual holds a favorable stance toward a particular subject in their academic curriculum, they might perceive it as valuable and essential for their career, thereby managing it efficiently.

- *Affective Component of Attitude:*

An individual's sentiment or emotional reaction to a specific object, person, or situation is referred to as attitude. For instance, a person with a favorable outlook on hands-on workshop activities may experience motivation and renewed energy when participating in physical tasks.

- *Behavioral Component of Attitude:*

Behavioral attitudes manifest through an individual's behaviors, including their inclination or avoidance of certain actions, readiness to engage in specific educational activities. This pertains to an individual's conduct or response to a particular object, person, or circumstance. For instance, an individual with a favorable stance toward industrial training programs is more inclined to attend and actively take part in training sessions consistently and punctually. Behavioral attitudes can be swayed by a variety of factors, including societal standards, personal principles, prior encounters, and perceived outcomes of the conduct.

➤ *Effect of Gender on Attitude*

Attitudes towards learning can be influenced by gender in various ways, impacting educational outcomes. Typically, women exhibit higher levels of motivation, conscientiousness, and organization compared to men, leading to better academic performance (Fennema et al., 1994). Gender plays a role in shaping students' perspectives on learning achievements through various channels.

- *Learning Styles:*

Studies have shown that males and females tend to have different learning styles. Gurpinar and Alimoglu (2009) Females tend to be more receptive to a collaborative and interactive learning style, while males tend to prefer a competitive and independent learning style. These differences can impact the way students engage with material and can influence learning outcomes.

- *Confidence:*

Studies have found that males tend to be more confident in their academic abilities than females. This can impact how students approach learning, and may influence their willingness to take risks, ask questions, and seek help from teachers or peers.

- *Stereotypes and Biases:*

Gender stereotypes and biases can also impact learning outcomes. For example, girls may be more likely to be discouraged from pursuing certain subjects, such as STEM (science, technology, engineering, and math). due to societal expectations and stereotypes. This can impact their opportunities and ability to succeed in these areas.

- *Learning Environment:*

The classroom environment can also play a role in learning outcomes. Females tend to perform better in classroom environments that are collaborative and supportive, while males tend to perform better in environments that are competitive and challenging.

- *Teacher Expectations:*

Teacher expectations can also impact learning outcomes. According to Jussim and Harber (2005) teachers tend to have higher expectations for male students, which can result in males receiving more attention, feedback, and opportunities for growth than females This can impact the academic achievements and overall performance of female students In conclusion, gender can affect learning outcomes in several ways, and it is essential to recognize regardless of their gender. This includes acknowledging and addressing stereotypes and biases, providing opportunities for diverse learning styles, and promoting a supportive and collaborative classroom environment.

➤ *Influence of Subject Area on Attitude*

The impact of the subject field on attitude denotes the way an individual's attitude can be influenced by a particular area or sphere of knowledge to which they are exposed (Osborne and Collins 2001). The subject field may encompass academic subjects, professional domains, or any specific area of interest that offers information and experiences relevant to a specific topic. As per Jackson (2003), individuals' attitudes toward diverse subjects are influenced by their experiences, outlook, beliefs, and principles.

➤ *The Subject Matter can Influence Attitudes in Several Ways:*

- *Perceived Relevance:*

The perceived relevance of a subject to an individual's life can significantly influence their attitude towards learning. If the individual sees the subject as relevant and useful, they may have a positive attitude towards it and be more motivated to learn. Conversely, if the individual sees the subject as irrelevant, they may have a negative attitude towards it and be less motivated to learn.

- *Difficulty Level:*

The difficulty level of a subject can also impact attitudes towards learning. If the subject is too challenging, individuals may feel overwhelmed and frustrated, leading to a negative attitude towards the subject. On the other hand, if the subject is too easy, individuals may feel bored and disengaged, leading to a negative attitude towards the subject.

- *Interest Level:*

The interest level of a subject can also impact attitudes towards learning. If an individual finds a subject interesting, they may have a positive attitude towards it and be more motivated to learn. Conversely, if the individual finds the subject uninteresting, they may have a negative attitude towards it and be less motivated to learn (Wang and Eccles, 2013).

- *Teaching Methods:*

The teaching methods used for a particular subject can also impact attitudes towards learning (Darling-Hammond and Bransford 2005). If the teaching methods are engaging, interactive, and promote critical thinking, individuals may have a positive attitude towards the subject and be more motivated to learn. Conversely, if the teaching methods are dull, boring, and rely on rote memorization, individuals may have a negative attitude towards the subject and be less motivated to learn.

Therefore, it is essential to create a positive and engaging learning environment that acknowledges and respects individual differences and promotes a love of learning for all subject areas. Instructors can use different teaching strategies and methods to engage students and help them develop positive attitudes towards all subject areas.

H. Summary of Reviewed Related Literatures.

Ugwuanyi and Ezema (2010) noted that SIWES plays a significant role in human resource development in Nigeria. Adeyemi (2002) and Mafe (2010) believed that the preparation of technology and vocational education students is incomplete without work experience because work experience is not acquired in a classroom teaching and learning environment but in a real work situation. It also implies that a student of technology and vocational education, before obtaining a law certificate, should be exposed to the realities of the world of work to be a productive citizen. Kazaure in wapmunk (2011) explained that work experience will serve as a factory to produce the necessary career personnel and that such vocational students can become self-reliant and help transform a nation from a consumer to a producer nation desirable for development. Achieving the objectives of both SIWES and TVE undoubtedly depends a lot on the mutual relationship between higher education institutions and industrial institutions as well as the active cooperation of the students themselves, because no matter how strong the relationship between schools and industry is, there will still be a disconnection if the students are not actively involved to the program. Students' attitude towards learning is influenced by many factors such as gender and business area. A positive attitude towards learning leads to an individual being actively involved in any learning process. This study will guide the Student Industrial Work Experience Scheme (SIWES) Coordinating Committees of the University of Lagos on how to appropriately provide them with the necessary orientation to ensure their active participation in the training program and to open the eyes of the students. to actively engage so that they can acquire all the prime knowledge and skills needed to be independent and be decent employees or entrepreneurs after graduation by bringing good changes to themselves and contributing positively to society. This study will also encourage industries to collaborate and recruit technology and vocational students by teaching them relevant skills that will ultimately not only reduce unemployment but also promote economic development, which will have a positive impact on skills acquisition and workforce development. in the country as a whole.

CHAPTER THREE

RESEARCH METHODOLOGY

➤ *Introduction*

The chapter provides a description of the methodology, which was used in the study. It includes description of the research design, sampling procedures, description of the study location, data collection procedures and data management procedures.

➤ *Research Design*

A Case Study Design was adopted for this research. A Case Study Design is a research methodology that involves an in-depth examination of a particular case or instance, such as an individual, group, organization, or event. Case study method enables a researcher to closely examine the data within a specific context. Case studies, in their true essence, explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships. A case study research method is a research strategy which focuses on understanding the dynamics within a limited real-life setting bounded by space and time (Stake, 2005).

➤ *Population of the Study*

The population of the study was 234 which comprises all final year students in Technology and Vocational Education Department. The final year students were considered suitable for the study because they had undergone SIWES in their third year in the University.

➤ *Sample and Sampling Technique*

The participants were a total of 145 which comprised only 4001 students in Technology and Vocational Education Department. This study only considered 4001 students of Technology Education, Business Education, and Home Economics Education Cohorts who had already experienced the Industrial Training. The involvement of the students in this study was based on accessibility and willingness to participate in the study because as at the time of data collection the final year students of Technology and Vocational Education were almost done with their final exams hence an Accidental Sampling Technique was used.

➤ *Research Instruments*

The instrument used for data collection was a Questionnaire developed and titled “**Technology and Vocational Education Students’ Attitude towards Students Industrial Work Experience Scheme.**” The instrument consists of section A and Section B. Section A comprises the demographic information of participants while Section B consists of 40 items which was adapted from Tapia 1996. The adoption involved replacing the word “mathematics” with SIWES and division of the 40 items into the components of Attitude which includes Cognitive, Affective and Behavioral.

➤ *Validation and Reliability of the Instrument*

The instruments (TVESATSIWESQ) were subjected to face validation by three experts in the field of TVE. Their corrections and suggestions were taken into consideration in the final copy of the instrument.

➤ *Reliability of the Instrument*

Copies of the instruments were administered to TVE students in Oyo State. Cronbach Alpha was used to determine the internal consistency of the instrument. Results of alpha were Section A, $\alpha=0.81$ and Section B, $\alpha=0.92$ and overall $\alpha=0.87$.

➤ *Technique of Data Collection*

Copies of the instrument were administered by the researcher. 145 copies of the questionnaires administered were dully filled and returned by the respondents. This gave 100% rate of return.

➤ *Method of Data Analysis*

Descriptive statistics of mean and standard deviations, t-test and ANOVA were used to analyze the data collected. On a five-point scale, any item with a mean of 3.50 and above was considered agreed upon while less than 3.50 was considered disagreed upon for positively worded items.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

➤ Introduction

This section focuses on the analysis and interpretation of the raw information (data) collected by the researcher.

➤ Demographic Information

Table 1 Gender Distribution

	Frequency	Percentage
Male	80	55%
Female	65	45%
Total	145	100%

Table 1 revealed that there were 80 male participants in the study, which accounts for 55% of the total sample. And there were 65 female participants in the study, which accounts for 45% of the total sample. Total: The total number of participants in the study is 145.

Table 2 Trade area distribution

Trade-areas	Frequency	Percentage
Technology Education	43	30%
Business Education	83	57%
Home Economics Education	19	13%
Total	145	100%

Table 2 provides data on the distribution of students across different trade areas within the academic project's scope. The Table provides information on the number of students in each trade area. The largest percentage of participants were in Business Education (57%), followed by Technology Education (30%), and the smallest percentage of participants were in Home Economics Education (13%).

Table 3 Gender-Trade area Cross-tabulation

	Trade-areas				Total
	Technology Education		Business Education	Home Economics Education	
	Male	35	42	3	80
Gender	Female	8	41	16	65
Total	43		83	19	145

➤ Presentation and Interpretation of Analysed Data

- *Research Question 1: What is the Attitude of Technology and Vocational Education students towards SIWES.*

Table 4 Mean and Standard Deviation of participants' Responses on the Attitude Scale n=145

S/N	Items	Mean	SD	Remarks
COG1	SIWES enhances my understanding of the theoretical concepts learned in the technology and vocational education program	3.19	1.34	Disagreed
COG2	Participating in SIWES helps me connect classroom knowledge to real-world application	3.37	1.40	Disagreed
COG3	SIWES helps develop the mind and teaches a person to think	3.26	1.29	Disagreed
COG4	SIWES provides me with new insights and perspectives in the technology and vocational education field	3.41	1.33	Disagreed
COG5	SIWES increases my motivation to excel in my technology and vocational studies	2.16	1.46	Disagreed
COG6	I feel confident in my ability to apply the knowledge and skills gained through the SIWES in future	3.31	1.34	Disagreed
COG7	Male and female students equally recognize the relevance of SIWES in applying theoretical knowledge to real-world work situation	1.97	1.38	Disagreed
COG8	SIWES offers equal learning opportunities for male and female students in the technology and vocational education field	2.23	1.52	Disagreed
COG9	Both male and female students gain new technical skills relevant to their future careers through participation in SIWES	3.26	1.33	Disagreed

COG10	SIWES provides equal opportunities for male and female students to enhance their knowledge and competence in the technology and vocational education field	2.10	1.28	Disagreed
COG11	SIWES boosts the confidence of both male and female students in their abilities and skills in the technology and vocational education field	3.35	1.21	Disagreed
COG12	Participation in SIWES equally enhances the enthusiasm of male and female students about pursuing a career in their chosen field	3.31	1.22	Disagreed
COG13	SIWES provides valuable practical experience that is directly applicable to my trade area	3.57	1.18	Agreed
COG14	I believe that participating in SIWES improves my trade-specific knowledge and competence	3.69	1.24	Agreed
COG15	SIWES helps me develop trade-specific skills that are relevant to my future career	3.64	1.12	Agreed
COG16	SIWES offers opportunities to learn about the latest industry trends and advancement in my trade area	2.38	1.52	Disagreed
COG17	SIWES increases my enthusiasm and motivation for pursuing a career in my specific trade area	2.16	1.48	Disagreed
COG18	Participating in SIWES boosts my confidence in my abilities within my trade area	3.41	1.22	Disagreed
Overall mean and SD of cognitive subscale		2.99	0.12	

AFF1	I feel enthusiastic about participating in SIWES and gaining practical experiences	3.26	1.30	Disagreed
AFF2	Both male and female students feel excited and motivated about the practical learning opportunities provided by SIWES	3.34	1.34	Disagreed
AFF3	Both male and female students believe that gender should not be a determining factor for participation in SIWES	3.46	1.33	Disagreed
AFF4	SIWES is a very interesting program for both male and female	2.31	1.59	Disagreed
AFF5	I have a positive emotional experience when participating in SIWES within my trade area	2.44	1.26	Disagreed
AFF6	providing more structured and specific learning objectives during SIWES would enhance my understanding of the programs purpose and goals	3.71	1.11	Agreed
AFF7	Offering pre-SIWES orientation programs that outline the expected outcomes and benefits would improve my perception of SIWES	3.79	1.09	Agreed
AFF8	Clearer guidelines and expectations regarding the application of theoretical knowledge during SIWES would enhance my learning experience	3.76	1.11	Agreed
AFF9	Providing additional resources and materials specific to my field of study during SIWES would enhance knowledge and competence	3.85	1.12	Agreed
AFF10	Offering mentorship or guidance programs during SIWES would increase my confidence and motivation	3.77	1.18	Agreed
AFF11	Recognizing and rewarding outstanding performance during SIWES would positively influence my attitude towards the program	3.74	1.09	Agreed
AFF12	Encouraging regular reflection and self-assessment activities during SIWES would enhance my overall satisfaction and engagement	3.78	1.13	Agreed
AFF13	Incorporating team building activities or opportunities for collaboration with other students during SIWES would enhances my sense of belonging	3.95	1.98	Agreed
AFF14	Ensuring that the assigned tasks and responsibilities during SIWES align with my field of study would improve my motivation and interest	3.77	1.08	Agreed
AFF15	Providing regular and constructive feedback on my performance during SIWES would improve my learning and development	3.92	1.05	Agreed
Overall mean and SD of Affective subscale		3.52	0.25	

BEH1	I actively seek opportunities to apply what i have learned during SIWES in my coursework	2.15	1.26	Disagreed
BEH2	SIWES motivates me to actively engage in professional networking and seek mentorship opportunities	2.39	1.19	Disagreed
BEH3	I am more likely to consider pursuing further training or education in my field after participating in SIWES	2.60	1.57	Agreed
BEH4	Both males and females are equally likely to consider pursuing further training or education in their fields after participating in SIWES	2.06	1.38	Disagreed
BEH5	SIWES encourages me to actively seek and engage in trade-specific networking opportunities	3.53	1.14	Agreed

BEH6	I am more likely to recommend SIWES to other students in my specific trade area based on my experience	2.15	1.47	Disagreed
BEH7	I actively apply the trade specific knowledge and skills gained during SIWES in my further work	3.69	1.19	Agreed
Overall mean and SD of Behavioral subscale		2.65	0.16	
Overall mean and SD of TVE Students' Attitude Towards SIWES		3.07	0.18	

Table 4 presents Technology and Vocational Education Students' mean responses and standard deviations on Attitude towards SIWES on the three subscales, namely, Affective, Behavioral and Cognitive and on the overall Attitude Scale. The overall mean score of 3.07 (SD=0.18) which is less than 3.50 cut-off point on a five-point Likert scale revealed that the students had negative attitude towards SIWES. In addition, the overall mean scores on each of the three subscales; Behavioral 2.65 (SD=0.16) and Cognitive 2.99 (SD= 0.12) were also less than 3.50 cut-off point except from Affective 3.52 (SD=0.25) which was a little above the cutoff point. The results revealed that the students had low understanding of the usefulness of SIWES (Cognitive), as such had low preference in terms of self-confidence, motivation and were anxious of SIWES (Affective), hence, the students most likely did not make the best out of SIWES and may not make good use of the knowledge and skills acquired during SIWES in their future endeavors (Behavior).

- *Research Question 2: What is the Influence of Gender on TVE Students' Attitude towards SIWES.*

To determine influence of gender on TVE students' attitude towards SIWES, an independence sample t-test was conducted to compare the mean attitude scores of male and female participants on the three subscales and on the overall Attitude Scale. The independent sample t-test result was presented in Table 5.

Table 5 T-Test Result of Influence of Gender on TVE Students' Attitude towards SIWES

Scales	Gender	N	Mean	S.D	t-cal	P
Cognitive	Male	80	2.90	.83	-1.52	.130
	Female	65	3.10	.78		
Affective	Male	80	3.46	.79	-1.09	.277
	Female	65	3.60	.72		
Behavioral	Male	80	2.62	.65	-.77	.439
	Female	65	2.70	.56		
Overall on Attitude scale	Male	80	3.06	.72	-1.37	.172
	Female	65	3.22	.65		

df=143; t significant @P≤0.05

As presented in Table 5, female students had relatively higher mean attitude scores than the male students on the overall Attitude Scale and on the three subscales. Results also revealed that, there were no significant differences between the male and female students mean scores on Affective subscale (t = -1.09, P>.05); Behavioral (t = -.77, P>.05); Cognitive (t = -1.52, P>.05); and Overall Attitude scale (t=-1.37, P>.05). The results mean that gender had no significant influence on TVE students' attitude towards SIWES.

- *Research Question 3: What is the influence of Trade-area on Technology and Vocational Education students' Attitude towards SIWES.*

To determine Influence of Trade-area on TVE students' attitude towards SIWES, Analysis of Variance (ANOVA) was used to compare the mean attitude scores of male and female participants on the three subscales and on the overall Attitude Scale. The ANOVA result was presented in Table 6.

Table 6 ANOVA Result of Influence of Trade-areas on TVE students' Attitude towards SIWES

Scales	Trade-area	N	Mean	S.D	t-cal	F
Cognitive	Technology Education	43	3.09	.81	2.37	.10
	Business Education	83	2.87	.82		
	Home Economics Education	19	3.27	.68		
	Total	145	2.99	.81		
Affective	Technology Education	43	3.48	.79	1.80	.17
	Business Education	83	3.48	.80		
	Home Economics Education	19	3.83	.46		
	Total	145	3.52	.76		
Behavioral	Technology Education	43	2.63	.64	.06	.95
	Business Education	83	2.67	.62		

	Home Economics Education	19	2.63	.52		
	Total	145	2.65	.61		
Overall on Attitude Scale	Technology Education	43	3.15	.71	1.56	.21
	Business Education	83	3.06	.71		
	Home Economics Education	19	3.37	.51		
	Total	145	3.13	.69		

As presented in Table 6, the Home Economic Education students had relatively higher mean attitude scores than Technology and Business Education students on the Cognitive and Affective subscales and on the overall Attitude Scale. Results also revealed that, there were no significant differences among the three Trade-areas mean scores on Affective subscale ($t = 1.80$, $P > .05$); Behavioral ($t = .06$, $P > .05$); Cognitive ($t = 2.37$, $P > .05$); and on overall Attitude scale ($t = 1.56$, $P > .05$). The results mean that Trade-area had no significant influence on TVE students' Attitude towards SIWES.

- *Research Question 4: What are the ways of improving TVE Students' Attitude towards SIWES*

Table 7: Mean and Standard deviation analysis of students' responses on ways of improving TVE Students' Attitude towards SIWES

S/N	Items	Mean	S.D	Remarks
1	Providing more structured and specific learning objectives during SIWES would enhance my understanding of the programs purpose and goals	3.71	1.11	Agreed
2	Offering pre-SIWES orientation programs that outline the expected outcomes and benefits would improve my perception of SIWES	3.79	1.09	Agreed
3	Clearer guidelines and expectations regarding the application of theoretical knowledge during SIWES would enhance my learning experience	3.76	1.11	Agreed
4	Providing additional resources and materials specific to my field of study during SIWES would enhance knowledge and competence	3.85	1.12	Agreed
5	Offering mentorship or guidance programs during SIWES would increase my confidence and motivation	3.77	1.18	Agreed
6	Recognizing and rewarding outstanding performance during SIWES would positively influence my attitude towards the program	3.74	1.09	Agreed
7	Encouraging regular reflection and self-assessment activities during SIWES would enhance my overall satisfaction and engagement	3.78	1.13	Agreed
8	Incorporating team building activities or opportunities for collaboration with other students during SIWES would enhances my sense of belonging	3.95	1.98	Agreed
9	Ensuring that the assigned tasks and responsibilities during SIWES align with my field of study would improve my motivation and interest	3.77	1.08	Agreed
10	Providing regular and constructive feedback on my performance during SIWES would improve my learning and development	3.92	1.05	Agreed
	Overall mean and SD of How to improve students' attitude towards SIWES.	3.80	0.28	

As presented in Table 7, all the items had their means above 3.5 cut-off point, which indicates that students agreed on various statements as ways of improving students' attitude towards SIWES. The most agreed-upon statements were providing team-building activities or collaboration opportunities, offering regular and constructive feedback, and providing additional resources and materials specific to their field of study.

➤ Findings

The findings of the study were presented based on research questions:

- The results revealed that the students had low understanding of the usefulness of SIWES (Cognitive), as such had low preference in terms of self-confidence, motivation and were anxious of SIWES (Affective), hence, the students most likely did not make the best out of SIWES and may not make good use of the knowledge and skills acquired during SIWES in their future endeavors (Behavioral).
- The results revealed that Female students had higher mean attitude scores than the male students on the overall Attitude Scale and on the three subscales. Results also revealed that, there were no significant differences between the male and female students mean scores on Affective, Behavioral, Cognitive subscales and the Overall Attitude scale.
- The Home Economic Education students had relatively higher mean attitude scores than Technology and Business Education students on the Cognitive and Affective subscales and on the overall Attitude Scale. Results also revealed that, there were no significant differences among the three Trade-areas mean scores on Affective, Behavioral, Cognitive subscales and the overall Attitude scale.

- The participants agreed with the proposed strategies for improving their attitude towards SIWES. These strategies include providing clearer learning objectives, conducting pre-SIWES orientation programs, offering mentorship and guidance, recognizing outstanding performance, encouraging reflection and self-assessment, incorporating team-building activities, and providing regular feedback. The overall mean value of 3.80 suggests that, on average, students have a positive outlook towards these improvement measures.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

A. Discussion

Table 4 revealed that the students generally disagreed with most of the statements related to SIWES, indicating a lack of positive perception in areas such as recognizing relevance, equal learning opportunities, and increased motivation, but they agreed with statements related to practical experience, trade-specific knowledge, and skill development, suggesting some positive outcomes from the program in these aspects. From the Affective scale it was observed that the students disagreed with the statements concerning enthusiasm, excitement, positive emotional experience, and the program's overall interest. However, they did show agreement with statements related to positive affective experiences during SIWES, such as enhanced understanding, positive perception, learning experience, confidence, motivation, Satisfaction, sense of belonging, and learning and development. These findings go in line with Akomolafe and Olatunji, (2017); Ufot, (2018); Ojo and Olukoya, (2020); Abosi and Abosi, (2019); Akeke and Asaolu, (2019).

From **Table 5** it was observed that the female students had more positive attitude towards SIWES than the male students on the overall Attitude Scale and on the three subscales. It was also revealed that, there were no significant differences between the male and female students Attitude towards SIWES on the three subscales and the overall Attitude scale. The findings go in-line with Brown et al. (2020) which aimed to assess and compare the attitudes of male and female students towards SIWES over a two-year period. It was noted from **Table 6** that The Home Economic Education students had more positive attitude towards SIWES than Technology and Business Education students on the Cognitive and Affective subscales and on the overall Attitude Scale. Results also revealed that, there were no significant differences among the three Trade-areas mean scores on Affective, Behavioral, Cognitive subscales and the overall Attitude scale. **Table 7** revealed that the students agree with the suggested strategies for improving their attitude towards SIWES. These strategies include providing clear objectives, offering pre-SIWES orientation, providing additional resources, offering mentorship and guidance, recognizing outstanding performance, encouraging reflection and self-assessment, incorporating team-building activities, and providing regular feedback.

➤ Summary of Findings

- The students had low understanding of the usefulness of SIWES (Cognitive), as such had low preference in terms of self-confidence, motivation and were anxious of SIWES (Affective), hence, the students most likely did not make the best out of SIWES and may not make good use of the knowledge and skills acquired during SIWES in their future endeavors (Behavioral).
- Female students had more cheerful outlook towards SIWES than the male students. However, there were no significant differences between the male and female students Attitude towards SIWES on the overall Attitude scale.
- The Home Economic Education students had more cheerful outlook towards SIWES than Technology and Business Education students. However, there were no significant differences among the three Trade-areas students' attitude towards SIWES as it was revealed on the overall Attitude scale.
- Students agreed with suggested strategies to enhance their attitude towards SIWES. These strategies include providing clear objectives, offering pre-SIWES orientation, providing additional resources, offering mentorship and guidance, recognizing outstanding performance, encouraging reflection and self-assessment, incorporating team-building activities, and providing regular feedback.

B. Conclusion

Based on the findings of this study, it is of utmost importance for the SIWES coordination committee and the industries to address the issues of gender disparities and improve various aspects of the program to provide a more inclusive, enriching, and rewarding experience for all students. The suggested strategies for improving attitude towards SIWES can serve as a blueprint for educational institutions and policymakers to optimize the impact of this experiential learning program on students' personal and professional development within their respective fields. As the SIWES program continues to evolve, further research and initiative-taking measures should be undertaken to create a dynamic and supportive learning environment that fosters growth, enthusiasm, and equitable opportunities for all students.

C. Recommendations

The findings of this study led to the following recommendations:

- Enhance students' comprehension of the program's purpose and objectives during SIWES by providing more detailed and specific learning goals.
- Improve students' knowledge and capabilities during SIWES by ensuring the availability of additional resources and materials tailored to their respective fields of study.
- Boost students' confidence and motivation by implementing mentorship or guidance programs during SIWES.
- Positively influence students' attitudes towards the program by recognizing and rewarding exceptional performance during SIWES.

- Enhance students' overall satisfaction and engagement during SIWES by promoting regular reflection and self-assessment activities.
- Foster a sense of belonging among participants by integrating team-building activities or opportunities for collaboration with other students during SIWES.
- Thoughtfully plan SIWES, gather necessary information about the organizations and firms where students will be placed, and provide students with this information in advance, rather than simply placing them for industrial training.
- Instead of just signing logbooks and listening to student presentations, supervisors should focus on providing guidance and supervision.

D. Suggestions for Further Studies

The following topics were suggested for further studies.

- Influence of SIWES on the career goals and aspiration of Technology and Vocational Education Students in colleges of education in Lagos State.
- The ultimate factors fueling the ineffectiveness of SIWES in the Technology and Vocational Education program.

E. Limitations of the Study

The findings of this study provide structured guide for promoting and encouraging adequate knowledge and skills acquisition for the University of Lagos department of Technology and Vocational Education students through effective and active participation in the SIWES programme. However, the findings cannot be generalized for the entire University or the entire higher institutions in the country.

REFERENCES

- [1]. Adenle, S.O. and Shobowale, I.O. (2009). The global economic crisis: A challenge to curriculum implementation in technical vocational education and training. 22nd Annual National Conference of Nigerian Association of Teachers of Technology (NATT).
- [2]. Aderonke, A. O. (2011). Students Industrial Work Experience and the Dynamics of 2. Sustainable Skills Acquisition and Utilization among Graduates in Nigeria. *Research Journal of International Studies*, 1(19), 130-136
- [3]. Akerejola (2008) Information and Guidelines for Students Industrial Work Experience Scheme [Http://www. itfnigeria. org/docs/siwes-op-guide.pdf](http://www.itfnigeria.org/docs/siwes-op-guide.pdf)
- [4]. Akpan, U. I. (2014). Business education curriculum and the new technologies in tertiary institutions in Nigeria. *Nigerian Journal of Business Education*, 2(1), 69-75.
- [5]. Akubudike, M., & Fiberesima D. (2010). Contemporary problems affecting training of Business Education students in River state: *African Journal of Education Research and Administration*, 3(4), 54-60.
- [6]. Aliyu, M.M. (2006). Business education in Nigeria: Trends and Issues. Ilorin Goshen Print media.
- [7]. *Nigerian Journal of Business Education*, 4(1), 2017-278.
- [8]. Asaba; 1 & 2. Aghenta, J. A. (1982). Strategies for the reform of vocational education in Nigeria: *Education and development* 2 (1). 242-247.
- [9]. Asele, E. D. (2010) Retention and Utilization of Technical and Vocational Teachers as a way forward for effective skills acquisition. A paper presented at ITF 18th National Training Conference on Technical and Vocational skills acquisition: An imperative for Nigerian's economic development held at the National Centre for Women Development Garki, Abuja.
- [10]. Asikadi, E. (2003). Restructuring SIWES to Meet the national development plan in educational system, National Conference of National Association for Research Development
- [11]. Ayua, M. T. (2006). Consolidating and sustaining industrial performance of school product in technology education for national development, In the proceedings of the conference of the Nigeria Association of Teachers of Technology (NATT). Lagos: Fembis international. 37- 43.
- [12]. Danko, A. I. (2006) Entrepreneurship Education for Vocational and Technical Education students, second edition pp. 2-3.
- [13]. Ekhovbiye, M. O. (2011) The role of Technical and Vocational Education in the technological development of Nigeria. *Ife journal of theory and Research in education (IJOTRE)* 3, (2)
- [14]. Ekundayo, H. T. (2006) Funding initiatives in higher education in Nigeria, being a paper presented at the National Conference of National Association for Educational Administration and planning Enugu State University of Science and Technology.
- [15]. Fakorede, S. O. (2013) Improving Vocational and Technical Education in Nigeria for National Development. CHALLENGES AND PROSPECTS IN AFRICAN EDUCATION SYSTEMS.
- [16]. Federal Republic of Nigeria (2004). National policy on education (Revised), Lagos: NERDC press. Hassan, M. M. (2006). Students' Industrial work experience (SIWES): A catalyst for sustainable technological development in Nigeria, In the proceedings of the conference of the Nigeria Association of Teachers of Technology (NATT). Lagos: Fembis international. 26-36.
- [17]. Joshua, J. A. (2015). CHALLENGES AND PROSPECTS OF VOCATIONAL AND TECHNICAL EDUCATION: MOST IMPORTANT TOOL FOR ENHANCEMENT AND INNOVATIONS IN HIGHER EDUCATION IN NIGERIA. *JOURNAL OF RESEARCH*, 24(1).
- [18]. Kalejaye, K. P. (2007). Vocational education and national development In A.O. Ayoola & B.P. Ehinmipare. (Eds.) *Technical and Vocation education: Assessment and examination (policy issues)*., Ibadan: Gabesther educational publishers.
- [19]. Lawal, A. W (2013) Technical and Vocational Education, a tool for National Development in Nigeria. *Mediterranean journal of social science* 4, (8): pp 85- 89.
- [20]. Mafe, O. A. T. (2009). Guide to Successful Participation in SIWES. Panaf Publishing Inc., Abuja and Lagos.
- [21]. National Commission for Colleges of Education. (NCCE) (2002). Minimum standards for Nigeria Certificate of Education (NCE): A summary of minimum standard for NCE teachers Federal Republic of Nigeria, Abuja: Nigeria, (i), 1 – 10.
- [22]. Ogbonnaya E. (2003). Enhancing your carrier potentials through the Students Industrial Work Experience Scheme (SIWES). Paper presented at a seminar organized by the Nigerian.
- [23]. Fellowship of evangelical Students, ESUT chapter in conjunction with the Industrial Training Unit ESUT, Enugu. March 07
- [24]. Ogbuanya, T. C. (2010) The effect of multiple intelligence – based instructional approach on student's cognitive achievement in Technical College. *Electronic Technology* 7, (1) :1-13.
- [25]. Ojimba, D. P. (2013) Technical and Vocational Education: Imperative for socio- economic and political in Nigeria. *European scientific journal* 9, (9) p 4.
- [26]. Oladiran, S. O., Benjamin, O. O., & Aiyelabowo, O. P. (2012). Managing the challenges of Industrial Work Experience Scheme in developing workforce among the youths in SouthWest Nigeria.
- [27]. Oloruntimilehin AJ (2014). Relationship between business students industrial work experience and classwork performance in colleges of education in Nigeria. Unpublished article. Retrieved from www.globalacademic.com/journals/pristine/.
- [28]. Olugbenga AF (2009). Towards effective student industrial work experience scheme curriculum development in applied science for adequate skills utilization: A case study of the school of applied science, Nuhu Bamali Polytechnic, Zaria, *Pacific Journal of Science and Technology* 10(1):234-239. Retrieved from <http://www.akamaiuniversity.us/PJST/htm>

- [30]. Olugbenga, A.F. (2009). Towards Effective SIWES Curriculum Development in Applied Sciences for Adequate Skills Utilization: A Case Study of the School of Applied Science, Nuhu Mamalli Polytechnic, Zaria. *Pacific Journal of Science and Technology*, 10(1), 234-239.
- [31]. Olunloyo, V.O.S. (2002), *The Challenges of Globalization for the Design of Technical Curriculum in Developing Countries* First Edition, University of Lagos Press. PP 217 – 237.
- [32]. Jimoh, J. A., Abd-El-Aziz, A. A. & Oguche, I. O. (2022). Students' attitude towards and interest in building/engineering drawing: a case study. *Nigerian Online Journal of Educational Sciences and Technology (NOJEST)*, 4 (2), 118-132
- [33]. Oranu, R. N.(2004). "Vocational and Technical Education in Nigeria" Retrieved June, 5, 2015
- [34]. Oryem-Origa, S.O.(2005), *Vocational Education and Manpower Development*, Lagos: Nigeria Vocational Monograph.
- [35]. Oyedele, J.P. (1990). Co-operative work experience programme for youths in business education. *Business Education Journals*, 2, 30-53.
- [36]. Puyate, S. T. (2001). Manpower development through relevant technology education curriculum for sustainable poverty alleviation, In the proceedings of the conference of the Nigeria Association of Teachers of Technology (NATT). Lagos: Fembis international.
- [37]. Rahmat M, Ahmad K, Idris S, Zainab NFA (2011). Relationship between employability and graduates' skill. *Procedia, Social and Behavioural Sciences* 59(2012):591-597. Retrieved from www.researchgate.net/publication/257716798.
- [38]. Rokeach, (2006). Behaviour as a function of Attitude. *International Journal of Prevention and Treatment*.
- [39]. Tapia, (1996). Attitude towards mathematics inventory Uwaifo, V.O.(2009), "Technical Education and its Challenges in Nigeria in the 21st Century.
- [40]. *International NGO Journal* Vol 5.(2)Pp. 40-44.

APPENDIX
UNIVERSITY OF LAGOS
DEPARTMENT OF TECHNOLOGY AND VOCATIONAL EDUCATION

Dear Sir/Madam,

The information required in this questionnaire is crucial to the research survey and it shall be treated confidential and used strictly for academic purposes. I will appreciate

SECTION A

➤ *Bio-Data*

Gender: Male [] Female []

Trade-area: Technology Education [] Business Education [] Home Economics Education []

SECTION B

SD – Strongly Disagree D – Disagree N– Neutral A – Agree SA – Strongly Agree

S/N	ITEMS	SD	D	U	A	SA
COGNITIVE	SIWES enhances my understanding of the theoretical concepts learned in the technology and vocational education program					
COGNITIVE	Participating in SIWES helps me connect classroom knowledge to real-world applications.					
AFFECTIVE	SIWES helps develop the mind and teaches a person to think.					
COGNITIVE	SIWES provides me with new insights and perspectives on the technology and vocational education field.					
AFFECTIVE	I feel enthusiastic about participating in SIWES and gaining practical experience					
AFFECTIVE	SIWES increases my motivation to excel in my technology and vocational education studies.					
AFFECTIVE	I feel confident in my ability to apply the knowledge and skills gained through SIWES in future endeavors.					

BEHAVIORAL	I actively seek opportunities to apply what I have learned during SIWES in my coursework					
BEHAVIORAL	SIWES motivates me to actively engage in professional networking and seek mentorship opportunities.					
BEHAVIORAL	I am more likely to consider pursuing further training or education in my field after participating in SIWES					
COGNITIVE	Male and female students equally recognize the relevance of SIWES in applying theoretical knowledge to real-world work situations.					
COGNITIVE	SIWES offers equal learning opportunities for male and female students in the technology and vocational education field.					
COGNITIVE	Both male and female students gain new technical skills relevant to their future careers through participation in SIWES.					
COGNITIVE	SIWES provides equal opportunities for male and female students to enhance their knowledge and competence in the technology and vocational education field					
AFFECTIVE	Both male and female students feel excited and motivated about the practical learning opportunities provided by SIWES.					
AFFECTIVE	SIWES boosts the confidence of both male and female students in their abilities and skills in the technology and vocational education field.					
AFFECTIVE	Participating in SIWES equally enhances the enthusiasm of male and female students about pursuing a career in their chosen fields.					
BEHAVIORAL	Both male and female students are equally likely to consider pursuing further training or education in their fields after participating in SIWES.					

COGNITIVE	Both male and female students believe that gender should not be a determining factor for participation in SIWES.					
AFFECTIVE	SIWES is a very interesting program for both male and female.					
COGNITIVE	SIWES provides valuable practical experience that is directly applicable to my trade area					
COGNITIVE	I believe that participating in SIWES improves my trade-specific knowledge and competence.					
AFFECTIVE	SIWES helps me develop trade- specific skills that are relevant to my future career					
AFFECTIVE	SIWES offers opportunities to learn about the latest industry trends and advancements in my trade area.					
AFFECTIVE	I have a positive emotional experience when participating in SIWES within my trade area.					
AFFECTIVE	SIWES increases my enthusiasm and motivation for pursuing a career in my specific trade area.					
AFFECTIVE	Participating in SIWES boosts my confidence in my abilities within my trade area.					
BEHAVIORAL	SIWES encourages me to actively seek and engage in trade-specific networking opportunities.					
BEHAVIORAL	I am more likely to recommend SIWES to other students in my specific trade area based on my experience.					
BEHAVIORAL	I actively apply the trade-specific knowledge and skills gained during SIWES in my future work.					

COGNITIVE	Providing more structured and specific learning objectives during SIWES would enhance my understanding of the program's purpose and goals.					
COGNITIVE	Offering pre-SIWES orientation programs that outline the expected outcomes and benefits would improve my perception of SIWES.					
COGNITIVE	Clearer guidelines and expectations regarding the application of theoretical knowledge during SIWES would enhance my learning experience.					
COGNITIVE	Providing additional resources and materials specific to my field of study during SIWES would enhance my knowledge and competence.					
AFFECTIVE	Offering mentoring or guidance programs during SIWES would increase my confidence and motivation.					
AFFECTIVE	Recognizing and rewarding outstanding performance during SIWES would positively influence my attitude towards the program.					
AFFECTIVE	Encouraging regular reflection and self-assessment activities during SIWES would enhance my overall satisfaction and engagement.					
BEHAVIORAL	Incorporating team building activities or opportunities for collaboration with other students during SIWES would enhance my sense of belonging					
BEHAVIORAL	Ensuring that the assigned tasks and responsibilities during SIWES align with my field of study would improve my motivation and interest.					
BEHAVIORAL	Providing regular and constructive feedback on my performance during SIWES would improve my learning and development.					