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Strengthening Skilled Education for Sustainable Human Capital Development in Nigeria: Opportunities, Importance and Challenges

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Abstract: Skilled education has become a critical component of national development because it equips individuals with practical, technical, and entrepreneurial competencies required for employment, innovation, and economic growth. In Nigeria, skilled education is primarily delivered through Technical and Vocational Education and Training (TVET) institutions, technical colleges, polytechnics, colleges of education (technical), and skills acquisition centres. Despite its significant contribution to workforce development, the sector continues to face numerous challenges that hinder its effectiveness. This paper reviews the concept of skilled education, presents its definitions from authoritative sources, and examines its importance in promoting employment, entrepreneurship, industrialization, poverty reduction, technological advancement, productivity, and sustainable national development. The paper further discusses major challenges confronting skilled education in Nigeria, including inadequate funding, obsolete training facilities, a shortage of qualified instructors, weak collaboration between educational institutions and industries, poor societal perception of technical education, and a curriculum mismatch with labour market demands. The review concludes that strengthening skilled education through increased government investment, regular curriculum review, improved infrastructure, instructor capacity development, and stronger industry partnerships will significantly contribute to Nigeria's human capital development and socio-economic transformation.

Keywords: Skilled education, Technical and Vocational Education and Training (TVET), human capital development.

1.0 Introduction

Education remains one of the most effective instruments for promoting national development, economic transformation, technological advancement, and social progress. The quality of a nation's workforce depends largely on the educational system and its capacity to equip citizens with the knowledge, practical competencies, technical expertise, and entrepreneurial skills required for productive participation in society. In the twenty-first century, globalization, industrialization, digital transformation, and rapid technological innovation have increased the demand for skilled workers able to adapt to changing labour market conditions. Consequently, skilled education has emerged as a strategic priority for governments seeking to improve productivity, reduce unemployment, promote innovation, and strengthen economic competitiveness. Skilled education, commonly referred to as Technical and Vocational Education and Training (TVET), emphasizes the acquisition of occupational knowledge, technical competencies, practical abilities, and professional attitudes required for effective performance in specific trades, professions, and industries [1]. Unlike conventional academic education, which primarily focuses on theoretical knowledge, skilled education combines classroom instruction with practical training, industrial attachments, apprenticeships, and workplace learning experiences to prepare learners for gainful employment and entrepreneurship. It therefore serves as an important bridge between education and the labour market.

In Nigeria, skilled education occupies a central place in the country's educational and economic development strategies. The Federal Government recognizes technical and vocational education as an essential component of the National Policy on Education because of its role in producing skilled manpower for agriculture, manufacturing, construction, healthcare, information technology, transportation, energy, and other productive sectors of the economy [2]. Institutions such as technical colleges, polytechnics, colleges of education (technical), innovation enterprise institutions, vocational centres, and skills acquisition programmes have been established to equip Nigerians with industry-relevant competencies that enhance employability and self-reliance. The rising rates of youth and graduate unemployment, poverty, and skills shortages in Nigeria have further reinforced the importance of skilled education. Many employers continue to express concerns about the mismatch between graduates' competencies and labour market requirements, highlighting the need for educational programmes that emphasize practical training, innovation, digital literacy, entrepreneurship, and problem-solving skills [3]. Effective skilled education therefore contributes to employment generation, industrial productivity, technological development, poverty reduction, economic diversification, and sustainable national development.

Despite these enormous benefits, the skilled education sector in Nigeria faces several challenges that limit its effectiveness. Inadequate funding, obsolete training equipment, poor infrastructure, a shortage of qualified technical instructors, weak collaboration between educational institutions and industries, negative societal perceptions of vocational education, and a curriculum mismatch with current industrial practices continue to hinder the quality of skills development. These constraints reduce graduate employability and weaken the sector's contribution to national development. Against this background, this paper reviews the concept of skilled education, examines its importance to Nigeria's socio-economic development, discusses the major challenges affecting its implementation, and offers recommendations to strengthen the sector and enhance sustainable human capital development [4], [5].

Methodology

2.0 Conceptual Terms

2.1 Concept of Skilled Education

The concept of skilled education is widely discussed in the literature within the broader framework of Technical and Vocational Education and Training (TVET) or vocational education. Skilled education refers to educational programmes that equip learners with practical competencies, technical knowledge, occupational skills, and professional attitudes needed for productive employment, entrepreneurship, and lifelong learning. Unlike conventional academic education, skilled education emphasizes practical learning, workplace experience, and competency-based training that prepare learners for specific occupations and the demands of the labour market. According to UNESCO-UNEVOC, Technical and Vocational Education and Training (TVET) is an educational process that links education with the world of work by enabling young people and adults to acquire the knowledge,

skills, and competencies required for employment, decent work, and entrepreneurship. This definition highlights the role of skilled education in enhancing employability, promoting economic development, and supporting sustainable livelihoods.

UNESCO further describes technical and vocational education as a combined process of education and training that equips individuals with the practical knowledge and technical skills required for specific occupations or professions. The organization emphasizes that skilled education integrates classroom instruction with practical learning experiences to prepare learners for careers in fields such as engineering, healthcare, agriculture, information technology, and manufacturing. The UNESCO Institute for Statistics (UIS) defines vocational education as education designed to enable learners to acquire the knowledge, skills, and competencies specific to a particular occupation, trade, or class of occupations. According to UIS, vocational education may include work-based learning, such as apprenticeships, and leads to qualifications recognized by national authorities and the labour market. This definition underscores the competency-based and employment-oriented nature of skilled education.

The National Board for Technical Education (NBTE) in Nigeria describes skilled education through the Nigerian Skills Qualifications Framework (NSQF). According to the NBTE, the NSQF is a system for developing, classifying, and recognizing skills, knowledge, understanding, and competencies acquired through formal education, workplace learning, or informal training. The framework promotes lifelong learning, quality assurance, and the recognition of occupational competencies, thereby strengthening skills development and workforce productivity. Merriam-Webster defines vocational education as education or training that prepares individuals for a particular occupation, trade, or industry through specialized instruction and practical experience. This definition emphasizes the occupational focus of skilled education and its objective of preparing learners for productive participation in the workforce. Based on the above definitions, the researcher defines skilled education as a structured educational process that integrates theoretical knowledge with practical and technical training to develop occupational competencies, professional attitudes, entrepreneurial abilities, and lifelong employability skills required for effective performance in specific careers and productive participation in national development.

3.0 Result and Discussion on Importance of Skilled Education in Nigeria

Skilled education plays a strategic role in Nigeria's socio-economic development by equipping individuals with practical competencies, technical expertise, and entrepreneurial capabilities required for productive employment and national growth. As Nigeria faces rising unemployment, technological transformation, and industrialization challenges, skilled education has become increasingly important for developing a competent workforce [6]. The following are ten major importance of skilled education in Nigeria.

1. Promotes Employment Opportunities

One of the most significant benefits of skilled education is its ability to enhance employability. Individuals who acquire practical and technical skills are better prepared to meet labour market demands than those with only theoretical knowledge. Skilled education equips graduates with the competencies employers require, thereby increasing their chances of securing gainful employment in both the public and private sectors.

2. Reduces Unemployment

Nigeria continues to experience high youth unemployment despite the growing number of graduates each year. Skilled education addresses this challenge by equipping learners with vocational and technical competencies that enable them to create employment for themselves or to become readily employable [7]. As more people acquire marketable skills, dependence on white-collar jobs is reduced, contributing to lower unemployment rates.

3. Encourages Entrepreneurship and Self-Reliance

Skilled education develops entrepreneurial abilities by exposing learners to practical business and production skills. Graduates can establish small and medium-sized enterprises in areas such as fashion design, automotive technology, information technology, agriculture, catering, welding, electrical installation, and construction. This promotes self-employment, wealth creation, and economic independence.

4. Supports Industrial and Economic Development

A nation's industrial growth depends largely on the availability of skilled labour. Skilled

education produces technicians, technologists, artisans, and other professionals who contribute directly to the manufacturing, construction, agriculture, healthcare, and technology sectors. These skilled workers improve productivity, stimulate innovation, and enhance national economic competitiveness.

5. Improves Productivity and Quality of Work

Workers who receive appropriate skills training perform their duties more efficiently and effectively. Skilled education equips individuals with modern techniques, professional ethics, and problem-solving skills that improve job performance, reduce production errors, and increase organizational productivity across different sectors of the economy [8], [9].

6. Promotes Technological Advancement

Technological innovation requires a workforce with specialized technical competencies. Skilled education enables learners to understand, operate, maintain, and develop modern technologies. This, in turn, supports the adoption of digital technologies, automation, renewable energy systems, artificial intelligence, and advanced manufacturing processes that drive national development.

7. Reduces Poverty

By improving employability and encouraging entrepreneurship, skilled education increases individuals' income-generating capacity. People with practical skills are more likely to secure employment or start successful businesses, thereby improving their standard of living and reducing poverty within households and communities.

8. Enhances National Development

Human capital is one of the most valuable resources for national development. Skilled education develops competent professionals who can contribute to infrastructure development, healthcare delivery, agricultural modernization, educational improvement, and industrial expansion. A skilled workforce strengthens national productivity and supports the achievement of sustainable development goals [10].

9. Promotes Social Inclusion and Lifelong Learning

Skilled education offers individuals from diverse educational and socio-economic backgrounds the opportunity to acquire employable skills. It also promotes continuous learning and professional development, enabling workers to upgrade their competencies in response to evolving labour market needs and technological change.

10. Reduces Dependence on Foreign Skilled Labour

Many developing countries rely heavily on expatriates for specialized technical services. Skilled education helps Nigeria produce competent local professionals capable of performing technical and professional tasks across various industries [11]. This reduces the country's dependence on foreign expertise, conserves foreign exchange, and strengthens national capacity for sustainable development.

B - Challenges Facing Skilled Education in Nigeria: A Review

Skilled education, commonly delivered through Technical and Vocational Education and Training (TVET), is widely recognized as an important instrument for promoting employment, entrepreneurship, and national development. Despite its importance, the implementation of skilled education in Nigeria continues to face numerous challenges that limit its effectiveness and contribution to economic growth. The following review discusses six major challenges facing skilled education in Nigeria.

Inadequate Funding

Inadequate funding remains one of the most serious obstacles to the development of skilled education in Nigeria. Technical and vocational education requires substantial financial investment because of the need for workshops, laboratories, modern equipment, instructional materials, and the ongoing maintenance of facilities [12]. However, government budgetary allocations to education have remained relatively low, making it difficult for institutions to procure modern training equipment or upgrade existing infrastructure. Consequently, many training centres rely on obsolete facilities that do not reflect current industrial practices. Poor funding also affects research, curriculum implementation, staff development, and students' practical training opportunities. International organizations have emphasized that sustainable financing is essential for building responsive, high-quality TVET systems capable of meeting labour market demands.

Obsolete Training Facilities and Inadequate Infrastructure

The quality of skilled education depends largely on the availability of modern workshops, laboratories, tools, machinery, internet access, and instructional materials. Unfortunately, many

technical colleges, vocational centres, and polytechnics in Nigeria continue to operate with outdated equipment that no longer reflects technologies used in contemporary industries [13]. Students therefore graduate with limited exposure to modern production techniques, automation, and digital technologies. Inadequate electricity supply, poor workshop maintenance, insufficient laboratories, and limited access to information and communication technology further undermine the effectiveness of practical training. These infrastructural deficiencies weaken graduates' competitiveness in both local and international labour markets.

Shortage of Qualified Technical Instructors

Effective technical education requires competent instructors with both technical expertise and modern pedagogical skills. Nigeria faces a shortage of qualified technical teachers, as many experienced professionals leave educational institutions for better-paying jobs in industry or abroad [14]. Those who remain often have limited opportunities for professional development and industrial retraining. As technology evolves rapidly, instructors who are not regularly exposed to new industrial practices may continue to teach outdated methods. The shortage of competent instructors reduces the quality of practical instruction and limits students' acquisition of industry-relevant competencies. The World Bank, ILO, and UNESCO identify teacher quality and continuous professional development as critical requirements for effective TVET systems.

Weak Linkages Between Educational Institutions and Industry

One of the major objectives of skilled education is to prepare learners for employment. However, collaboration between Nigerian training institutions and industry remains weak. Many institutions have limited partnerships with manufacturing firms, construction companies, agricultural enterprises, and technology organizations. As a result, industrial attachment programmes, internships, apprenticeships, and workplace learning opportunities are often inadequate. Graduates may therefore possess theoretical knowledge but lack the practical experience employers require. Strong partnerships between industry and educational institutions are essential for curriculum review, practical training, technology transfer, and improved graduate employability.

Negative Societal Perception of Skilled Education

Skilled education continues to suffer from negative public perception in many parts of Nigeria. Many parents and students still regard university education as more prestigious than vocational or technical education [15]. Consequently, skilled education is often seen as an alternative for students who fail to gain admission to conventional university programmes, rather than as a valuable career pathway. This perception discourages talented young people from enrolling in technical and vocational programmes, leading to low enrolment and reduced investment in the sector. Changing societal attitudes through public awareness campaigns, career guidance, and improved employment opportunities for skilled graduates remains essential to strengthening skilled education in Nigeria.

Curriculum–Labour Market Mismatch

Rapid technological advancement has transformed the nature of work across industries. Unfortunately, the curriculum of many skilled education institutions in Nigeria is not updated regularly to reflect emerging technologies, including digital skills, renewable energy, artificial intelligence, automation, and advanced manufacturing practices. This mismatch between training programmes and labour market needs contributes to graduate unemployment and skills shortages across industries. International organizations have stressed that TVET curricula should be competency-based, flexible, and regularly reviewed in collaboration with employers to ensure graduates possess relevant and marketable skills.

4.0 Conclusion

Skilled education remains one of the most effective ways to develop a competent workforce capable of driving Nigeria's industrialization, economic diversification, technological innovation, and sustainable development. By combining theoretical instruction with practical and occupational training, skilled education equips learners with employable competencies, entrepreneurial abilities, and professional attitudes required for success in the modern labour market. The review has shown that skilled education contributes significantly to job creation, poverty reduction, industrial productivity, technological advancement, entrepreneurship, social inclusion, and national competitiveness.

However, the realization of these benefits is constrained by persistent challenges, including inadequate funding, obsolete facilities, a shortage of qualified instructors, weak industry collaboration, poor societal perception, and a curriculum that does not align with labour market needs. Addressing

these challenges requires increased government commitment, stronger private-sector participation, regular curriculum reviews, modernization of training facilities, continuous professional development for instructors, and improved institutional partnerships with industry. Implementing these measures will enhance the quality, relevance, and effectiveness of skilled education, thereby enabling Nigeria to develop a highly skilled workforce capable of supporting sustainable economic growth and national development.

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