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Skilled Education as a Catalyst for Human Capital Development and Economic Transformation in Nigeria: Benefits, Challenges and Strategies for Improvement

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Abstract: Skilled education has become an important component of national development because of its capacity to equip individuals with practical competencies, technical knowledge, occupational abilities, and entrepreneurial skills required for employment and economic productivity. In Nigeria, where unemployment, skills mismatch, and inadequate industrial capacity remain major developmental concerns, skilled education provides an effective pathway for developing a competent workforce capable of supporting socio-economic transformation. This paper examines the concept of skilled education, its relevance, benefits, challenges, and strategies for strengthening its implementation in Nigeria. The paper highlights that skilled education enhances employability, promotes entrepreneurship, reduces unemployment and poverty, improves productivity, supports industrial development, and encourages technological innovation. Despite these benefits, the sector faces several challenges, including inadequate funding, obsolete training facilities, shortage of qualified instructors, weak collaboration between educational institutions and industries, negative societal perception, and mismatch between training programmes and labour market requirements. The paper argues that promoting skilled education requires increased government investment, modernization of training infrastructure, curriculum reform, capacity development for instructors, stronger industry partnerships, and effective policy implementation. Strengthening skilled education will contribute significantly to human capital development, economic diversification, youth empowerment, and sustainable national development in Nigeria.

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

Introduction

Education remains a major instrument for individual empowerment, economic growth, technological advancement, and national development. Traditionally, education systems have focused mainly on academic knowledge acquisition; however, contemporary economic realities have increased the demand for practical competencies and occupational skills that enable individuals to function effectively in changing labour markets. The emergence of knowledge-based economies,

technological innovation, globalization, and industrial transformation has made skilled education increasingly important as nations seek to develop productive and competitive human resources. Skilled education, often referred to as Technical and Vocational Education and Training (TVET), is an educational approach that combines theoretical knowledge with practical training to develop technical competencies, occupational abilities, and entrepreneurial skills. It prepares individuals for specific careers, employment opportunities, and self-reliance through classroom instruction, workshops, laboratories, apprenticeships, and workplace experiences. Unlike conventional education that may emphasize theoretical understanding, skilled education focuses on the application of knowledge to solve practical problems and perform productive activities [1].

In Nigeria, skilled education is recognized as a significant pathway for addressing unemployment, poverty, and the shortage of competent technical manpower. Through technical colleges, polytechnics, vocational institutions, and skills acquisition programmes, skilled education provides opportunities for individuals to acquire relevant competencies in areas such as agriculture, engineering, information technology, construction, manufacturing, healthcare, and entrepreneurship. The growing demand for skilled workers in different sectors of the economy demonstrates the importance of developing a workforce capable of supporting national productivity and innovation.

The benefits of skilled education are extensive. It improves employability by equipping learners with labour market-relevant competencies; promotes entrepreneurship by enabling individuals to establish businesses; reduces unemployment and poverty through income generation; supports industrial development by producing competent technical personnel; improves workplace productivity; and encourages technological advancement through innovation and digital skills development. These contributions make skilled education an essential component of sustainable human capital development [2], [3].

Despite its importance, skilled education in Nigeria faces several challenges that limit its effectiveness. Inadequate funding has affected the provision of modern training facilities and equipment. Many institutions operate with outdated infrastructure that does not reflect current industrial practices. The shortage of qualified technical instructors, weak partnerships between educational institutions and industries, negative public perception of vocational careers, and curriculum gaps have also affected the quality and relevance of skills training. These challenges contribute to skills mismatch and reduce the ability of graduates to compete effectively in the labour market [4]. Therefore, skilled education remains a vital tool for transforming Nigeria's human capital base and achieving sustainable economic development. Strengthening the sector will not only improve employment opportunities but also support innovation, industrial growth, self-reliance, and national competitiveness.

Materials and Methods

Conceptual Terms

Concept of Skilled Education

Education in the contemporary world is increasingly shifting from knowledge acquisition alone to the development of practical competencies that enable individuals to function effectively in the workplace and society. This shift has increased the importance of skilled education, which is commonly discussed in academic and policy literature under the concepts of Technical and Vocational Education and Training (TVET), vocational education, and skills development. Skilled education focuses on equipping learners with technical abilities, occupational competencies, practical knowledge, and entrepreneurial skills required for employment, self-reliance, and sustainable economic development. According to UNESCO-UNEVOC (2022), Technical and Vocational

Education and Training (TVET) refers to education, training, and skills development associated with different occupational areas, production activities, services, and livelihoods. The organization explains that TVET provides individuals with the knowledge, skills, and competencies required for employment, decent work, and lifelong learning. This definition indicates that skilled education goes beyond classroom learning by emphasizing practical competence and the ability of individuals to apply acquired knowledge in real-life occupational situations. The International Labour Organization views skills development as a process through which individuals acquire technical, vocational, and employability skills needed to obtain productive employment, improve workplace performance, and respond to changing labour market conditions. From this perspective, skilled education serves as a mechanism for improving workforce productivity and reducing skills gaps between educational institutions and industries. It also supports economic growth by preparing individuals with relevant competencies required in different sectors. The UNESCO Institute for Statistics defines vocational education as educational programmes designed to enable learners to acquire knowledge, practical skills, and competencies related to specific occupations, trades, or professional areas. This definition emphasizes the occupational orientation of skilled education, where learning is structured around developing abilities required for particular careers. It highlights the importance of practical experiences, workplace exposure, and competency-based assessment.

In the Nigerian context, the National Board for Technical Education (NBTE) explains skilled education through the Nigerian Skills Qualifications Framework (NSQF) as a system for developing, assessing, and recognizing knowledge, skills, understanding, and competencies acquired through formal education, workplace training, and informal learning. This perspective demonstrates that skilled education includes various pathways through which individuals can acquire recognized competencies for employment and career advancement. Similarly, the Organisation for Economic Co-operation and Development describes vocational education and training as programmes that prepare learners for specific occupations through a combination of theoretical instruction and practical workplace experiences. The OECD perspective emphasizes the relationship between skilled education and labour market demands, suggesting that effective skilled education should be responsive to industrial needs and technological changes.

From the reviewed definitions, it is clear that skilled education is characterized by practical learning, occupational competence, workplace relevance, and employability development. It serves as an important approach for addressing unemployment, promoting entrepreneurship, strengthening human capital, and supporting national development. In Nigeria, where youth unemployment and skills mismatch remain major challenges, skilled education provides an opportunity to produce competent graduates capable of contributing meaningfully to economic transformation. Based on the reviewed literature, the researcher defines skilled education as a planned and organized educational process that integrates theoretical knowledge, practical training, technical competencies, and entrepreneurial abilities to prepare individuals for employment, self-reliance, career development, and active participation in socio-economic development.

Result and Discussion

Benefits of Skilled Education

1. Enhances Employability and Job Opportunities

Skilled education equips individuals with practical, technical, and occupational competencies required by employers in different sectors of the economy. By providing learners with industry-relevant skills, it increases their chances of securing employment and reduces the gap between educational qualifications and labour market expectations.

2. Promotes Entrepreneurship and Self-Reliance

Skilled education encourages individuals to become self-employed by providing them with practical abilities needed to establish and manage small and medium-scale enterprises. Graduates can use acquired skills in areas such as agriculture, information technology, construction, fashion design, automobile services, and manufacturing to create income-generating opportunities.

3. Reduces Unemployment and Poverty

By producing individuals with marketable skills, skilled education contributes to reducing unemployment, especially among young people [5]. Individuals with vocational and technical competencies are more capable of generating income through employment or entrepreneurship, thereby improving their living standards and reducing poverty.

4. Supports Industrial and Economic Development

Skilled education provides the technical workforce needed for industrial growth, technological advancement, and economic transformation. Skilled technicians, artisans, and professionals contribute to productivity improvement in sectors such as manufacturing, agriculture, energy, construction, and information technology [6].

5. Improves Productivity and Workplace Performance

Individuals who receive skilled education possess specialized knowledge and practical competencies that enable them to perform tasks efficiently and effectively. Skilled workers contribute to improved quality of products and services, innovation, problem-solving, and organizational growth.

6. Encourages Technological Advancement and Innovation

Skilled education prepares learners to understand, apply, and develop modern technologies. Through technical training and practical experiences, individuals gain abilities required for digital transformation, automation, renewable energy development, and other emerging technological fields [7].

Strategies to Promote Skilled Education in Nigeria

Skilled education is essential for producing a competent workforce capable of driving industrialization, technological innovation, entrepreneurship, and sustainable economic development. However, realizing these benefits requires deliberate interventions by government, educational institutions, industries, and development partners. The following are ten major strategies for promoting skilled education in Nigeria.

1. Increase Government Funding for Skilled Education

Adequate funding is fundamental to improving the quality of skilled education in Nigeria. Government should increase budgetary allocations to technical colleges, polytechnics, vocational centres, and other TVET institutions to enable them to acquire modern workshops, laboratories, machines, instructional materials, and digital technologies. Increased funding should also support research, curriculum development, staff training, students' practical projects, and infrastructure maintenance [8]. Sustainable financing will improve the quality and accessibility of skilled education while enabling institutions to respond effectively to changing labour market demands. International organizations emphasize that strong governance and adequate financing are essential for building effective TVET systems.

2. Modernize Training Facilities and Learning Infrastructure

Modern equipment and technology are indispensable for effective skills acquisition. Government and institutional administrators should continuously upgrade workshops, laboratories, ICT centres, internet facilities, simulation equipment, and teaching materials to reflect current

industrial standards. Learners trained with modern technologies develop competencies that correspond to workplace realities, making them more productive and employable after graduation [9], [10]. UNESCO also advocates digital transformation as a key priority for strengthening TVET systems in Nigeria and globally.

3. Strengthen Industry–Institution Collaboration

Strong partnerships between educational institutions and industries improve the relevance of skilled education. Industries should participate in curriculum development, provide internship opportunities, donate equipment, support apprenticeship programmes, and mentor students. Such collaboration enables learners to acquire practical workplace experience while institutions remain informed about emerging industrial skill requirements. UNESCO's BEAR III Project in Nigeria demonstrates that structured partnerships between industries and TVET institutions significantly improve graduate employability and entrepreneurship [11].

4. Regular Review of TVET Curriculum

The curriculum for skilled education should be reviewed periodically to reflect technological innovations, labour market needs, artificial intelligence, digital literacy, renewable energy, green technologies, automation, and entrepreneurship. Curriculum review should involve employers, professional bodies, industries, and regulatory agencies to ensure graduates acquire competencies demanded by contemporary workplaces [12]. Flexible and competency-based curricula make skilled education more responsive to economic transformation and future employment opportunities.

5. Improve the Capacity of Technical Instructors

The effectiveness of skilled education depends greatly on the competence of instructors. Governments and institutional managers should organize continuous professional development, industrial attachment programmes, workshops, conferences, and certification opportunities for technical teachers. Regular exposure to modern industrial practices enables instructors to update their knowledge and effectively transfer current technical skills to learners. Continuous teacher development also improves instructional quality and students' learning outcomes.

6. Expand Apprenticeship and Work-Based Learning

Practical workplace experience should become an integral component of skilled education. Institutions should collaborate with industries to provide structured internships, industrial training, apprenticeships, and work-based learning opportunities where students can apply classroom knowledge in real production environments. Such experiences strengthen technical competence, improve confidence, and facilitate a smooth transition from school to employment [13]. UNESCO and the ILO recognize workplace learning as a critical strategy for improving employability.

7. Promote Entrepreneurship Education

Entrepreneurship should be fully integrated into skilled education programmes. Students should receive training in business planning, financial management, innovation, marketing, leadership, and enterprise development alongside technical skills. Entrepreneurship education encourages graduates to establish businesses rather than depend solely on paid employment [14]. This approach contributes to job creation, poverty reduction, wealth generation, and economic diversification. UNESCO's TVET strategy identifies entrepreneurship as a major pillar of modern skills development.

8. Improve Public Awareness and the Image of Skilled Education

Many Nigerians still perceive technical and vocational education as inferior to university education. Government, educational institutions, professional associations, and the media should organize sustained public enlightenment campaigns highlighting the economic value, career opportunities, and entrepreneurial potential of skilled education. Recognizing outstanding skilled

professionals, organizing skills competitions, and showcasing successful graduates can further improve public perception and increase enrolment [15]. UNESCO recommends awareness and advocacy as important components of strengthening TVET systems in Africa.

9. Encourage Private Sector Participation

Private sector organizations should actively participate in financing and developing skilled education through public-private partnerships. Businesses can establish training centres, provide scholarships, donate modern equipment, support curriculum development, sponsor innovation projects, and offer industrial placements. Such collaboration strengthens institutional capacity, improves training quality, and ensures graduates possess industry-relevant competencies. Effective partnerships between employers and TVET institutions are widely recognized as essential for quality skills development.

10. Strengthen Policy Implementation, Monitoring, and Quality Assurance

Government should ensure the effective implementation of policies guiding skilled education through regular monitoring, accreditation, quality assurance, and evaluation. Regulatory agencies such as the National Board for Technical Education (NBTE) should continuously assess institutional performance, enforce minimum standards, promote competency-based assessment, and encourage evidence-based reforms. Effective governance and accountability will improve the credibility, relevance, and quality of skilled education across Nigeria.

Conclusion

Skilled education is a fundamental driver of human capital development, economic empowerment, and sustainable national transformation in Nigeria. The review established that skilled education provides individuals with practical knowledge, technical competencies, and entrepreneurial abilities necessary for employment, self-reliance, and meaningful participation in economic activities. Its benefits extend beyond individual development to include poverty reduction, unemployment control, industrial advancement, productivity improvement, and technological innovation. However, despite its importance, skilled education continues to experience challenges such as inadequate funding, poor infrastructure, obsolete training equipment, shortage of competent instructors, weak industry collaboration, negative societal attitudes, and curriculum mismatch with labour market demands. These challenges have limited the ability of skilled education institutions to produce graduates with relevant and competitive skills. Addressing these challenges requires a comprehensive approach involving government, educational institutions, industries, and other stakeholders. Increased investment, modern training facilities, competency-based curriculum reforms, instructor development, industry partnerships, entrepreneurship promotion, and effective policy implementation are essential for improving the quality and relevance of skilled education. When properly strengthened, skilled education can serve as a powerful mechanism for reducing unemployment, promoting innovation, supporting industrialization, and building a skilled workforce capable of driving Nigeria's socio-economic development.

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