REIMAGINING BUILDING AND WOODWORK TECHNOLOGY EDUCATION THROUGH FUNCTIONAL PRODUCTION UNITS TO ENHANCE SKILLS DEVELOPMENT AND SUSTAINABLE YOUTH EMPLOYABILITY

***[1]SHOBOWALE, I. Olukayode, [2]BANJOKO, M. Olusola & [3]AYEORIBE, Toyin S.**
*[1]Department of Technology and Vocational Education,
University of Lagos, Akoka
[2]Department of Building Technology Education,
Federal College of Education (Technical), Akoka
[3]Department of Woodwork Technology Education,
Federal College of Education (Technical), Akoka
*[1]ishobowale@unilag.edu.ng; [2]banjokomosesolusola@gmail.com; [3]ayeoribe@yahoo.com

Abstract
This research focused on the reimagining of building and woodwork technology education through the integration of functional production units (PUs), aiming to foster skill development and bolster sustainable employment opportunities for the youth. This sought to tap into the multifaceted potential for skill enhancement and employability prospects that have been relatively underemphasized within tertiary institutions in Lagos State. The study adopted survey research design. The population for the study consisted of 175 participants, made up of 43 building and woodwork facilitators and 28 registered building and woodwork technology entrepreneurs from the study areas. Sampling was unnecessary as the population was small enough to be managed in its entirety. A self-structured instrument developed by the researchers' title: Reimagining Building and Woodwork Technology Education through Functional PUs Questionnaire (RBWTEFPUQ), validated by three experts and with reliability co-efficient of 0.94, obtained through Cronbach Alpha method, which was used for data collection. Data collected were analyzed using Mean and Standard Deviation to answer the research questions. The findings of the study revealed 13 functional building and woodwork technology education production units required; 12 prospects of reimagining building and woodwork technology education through production units, and 13 strategic approaches to reimagining building and woodwork technology education through production units to enhance skills development and sustainable youth employability. The study recommended among others to embracing modern tools and technology in the production units to expose youths to current industry standards, improving their technical skills and employability.

Keywords: Reimagining, Building technology and woodwork technology, Functional PUs, Skills development, Youth employability

Introduction

Education is an ongoing process that equips individuals with practical skills and knowledge for specific careers. It is tailored to support individuals in adapting to changes in their industries and encourages a commitment to continuous learning and the acquisition of new skills as technologies and practices evolve (Pathak, 2018). According to Maclean and Majumdar (2019), education encompasses imparting practical skills and competencies related to specific trades, such as building and woodwork technology. It emphasizes hands-on training, technical proficiency, and the acquisition of trade-specific knowledge. This explanation highlights that education empowers young individuals to acquire relevant skills in building and woodwork technology education. The fields of building and woodwork technology education play a crucial role in developing skills and competencies in the construction and woodworking industries. With the aim of enhancing skills development and promoting sustainable youth employability, there is a growing need to reimagine the traditional approaches to building and woodwork

technology education through production units. This holistic approach equips building and woodwork technology education youths with not only technical skills but also the entrepreneurial mindset necessary for starting their own ventures or contributing to the growth of existing enterprises.

A building is a physical structure designed and constructed for various purposes, such as housing, commercial activities, or public use. It encompasses structural systems, building envelope design, (heating, ventilation, and air conditioning (HVAC) systems, energy efficiency, and smart building technologies (Ching, 2019). building technology education in the view of Rezgui (2015) provides students with knowledge and skills related to the theory and practice of building technology. These educational programmes typically cover various aspects of building design, construction techniques, building systems, and sustainable building practices. The aim is to equip youths with the necessary expertise to contribute to the building industry and to prepare youths' craftsmanship for careers in woodworking technology education related fields.

Woodwork refers to the craft or activity of creating objects, structures, or art using wood as the primary material. It involves various techniques such as cutting, carving, shaping, and joining of wood (Korn, 2010). Woodwork technology education is among the technology education programmes in tertiary institutions in Nigeria. Woodwork technology education in the opinion of Hylton (2018) involves the study and application of woodworking techniques, tools, and materials for the design, construction, and finishing of wooden objects and structures. The areas of woodwork technology education enterprise for economic and production skills development in the study of Osita (2013) include upholstery, furniture-making, carpentry, joinery, machine woodworking, ornamental woodwork (woodcarving and turning), among others. However, woodwork technology education is a programme aimed at empowering youths to design, manufacture, maintain and market different types of wood products in homes, room and offices buildings economically.

Building and woodwork technology education refers to an integrated educational approach that combines both building technology and woodwork technology (Hylton, 2020). The programmes provides youths with a comprehensive understanding of building construction, design principles, and woodworking techniques. It covers a wide range of courses such as structural systems, construction materials, furniture design, joinery, and finishing. The goal is to equip youths with multidisciplinary skills to pursue careers in construction, architectural design, or woodworking industries. This implies that building and woodwork technology education programme in tertiary institutions should be geared towards youth employability in the world of work.

Youth refers to the period of life when individuals transition from childhood to adulthood. This period is often marked by educational pursuits, personal growth, identity formation, and the exploration of career paths and relationships. It is characterized by significant physical, cognitive, emotional, and social changes as individuals navigate the process of maturing and developing their identities. Youths in Nigeria, in the opinion of Asa and Kudehinbu (2014) are young at heart, energetic, most exuberant, sharpest in memory, vibrant, and are described as those within the age bracket of 18-35 years of age. This may equally vary from country to country.

Despite these positive attributes, Del-Tumi (2011) argued that youths are the most vulnerable, most deprived, most discriminated against, most marginalized, mostly exploited particularly by politicians, and most endangered species in the society. Premised on the present manpower-labour market discrepancy scenario, this study demands to proposed a model of reimagining building and woodwork technology education to enhance skills development among youths in tertiary institutions, whereby the various departments should run functional production units (Pus), where individuals in their departments will acquire and build the desirable job skills for employability before graduation.

Reimagining is the process of transforming existing programmes to better meet the needs of industry stakeholders and improve the employability of graduates. Allison and Susan (2015) stated that reimagining often used to signify the act of envisioning, rethinking, or creatively transforming something to bring about innovative change. It involves a comprehensive reevaluation and transformation of educational systems and practices to better meet the needs of students in a changing world. However, reimagining encompasses the incorporation of new technologies, developing new training methods, creating new partnerships with industry stakeholders, and establishing functional PUs into existing educational training programs.

Functional refers to something that is designed or intended to be practical, useful, and purposeful. It implies efficiency and effectiveness in performing a specific task or fulfilling a particular role (Bloch, 2018). PUs according to Grilo (2017) is a designated areas or sections within an educational facility where students or youths engage in hands-on activities related to building construction, woodworking, and crafting. Smith (2019) noted that PU denotes physical spaces within educational institutions equipped with woodworking tools, machinery, and materials. It provides insights into creating effective multidisciplinary teaching and learning models within these production units. These units according to Grilo are equipped with tools, machinery, and materials required for students or youths to practice and apply theoretical knowledge, enhancing their practical skills and understanding of the field. Seymour (2005) argued that PUs in education represent modular or compartmentalized segments of the curriculum that focus on specific competency or skill set, allowing for a systematic and organized approach to teaching and learning in building and woodwork technology education.

Functional building and woodwork technology education PUs are specific areas within an educational institution, equipped and organized to provide practical, hands-on learning experiences in building construction and woodworking. These units according to Kimmons and Hall (2016) are structured to facilitate the acquisition of skills and knowledge related to construction, woodworking, and related fields. The authors focused on active learning strategies in higher education, emphasizing teaching for leadership, innovation, and creativity. It offers insights into innovative teaching strategies that could be applied in educational settings. This explains that reimagining building and woodwork technology education functional PU can create a better-rounded and skilled workforce, better-prepared youths in tertiary institutions to meet the demands of the construction and woodworking industries. This approach can significantly provide practical training that complements contribute to enhance skills development.

Skills development is a crucial component of personal and professional growth helps individuals enhance their employability and productivity. It involves the process of acquiring and improving the knowledge, abilities, and competencies necessary to perform a particular task or job. Brown and Jones (2020) observed the importance of skills development in the digital age, arguing that technological advancements have changed the nature of work and created a demand for new skills. Kim and Lee (2023) posited that fostering reimagining building and woodwork technology education through PU could drive economic growth and sustain youth employability.

Sustainability in a study conducted by Elkington (2018), it involves practices that promote economic growth, stability, and prosperity without depleting resources or causing harm to the environment. According to Dillard, Dujon and King (2017), sustainability focuses on creating equitable and just societies where individuals' basic needs are met, and social cohesion, inclusivity, and equality are promoted. Observation by Wang and Li (2021) revealed that the use of production units in education and training programs can significantly improve the employability of young people by equipping them with relevant and practical skills.

Employability is related to an individual's access to career opportunities, job security, and potential for advancement within a chosen field or industry. Brown, Hesketh and Williams (2003) stated that employability involves being suited to the workplace demands and dynamics. It encompasses being able to apply theoretical knowledge effectively, being adaptable to

different work environments, and understanding the industry's needs and trends. Zhang and Chen (2022) contended that the integration of digital technologies, such as virtual reality and artificial intelligence, into production units could enhance the effectiveness and efficiency of building and woodwork technology education programs. This approach by Zhang and Chen can promote entrepreneurship and innovation, leading to economic growth and social progress. However, reimagining building and woodwork technology education through PUs prospects will better prepare young individuals for a successful transition into the workforce in a rapidly evolving job market. However, reimagining building and woodwork technology education by incorporating PUs holds the prospects of preparing young individuals with the skills required for a successful adaptation to a dynamically evolving job market.

A prospect embodies a potential opportunity or possibility, often within the realms of business, investment, or development, suggesting promising avenues for future growth or success. Garcia (2022) posited that a prospect denotes the foreseeable economic landscape encompassing forthcoming conditions, market tendencies, and opportunities for advancement within a specified sector, locale, or commercial sphere. Prospects in the view of Chen (2018) entail the possible improvements in efficiency, productivity, and effectiveness within building and woodwork technology education by leveraging technological advancements and optimizing PUs.

Prospects of reimagining building and woodwork technology education encompass various aspects related to the potential benefits and opportunities of transforming this educational domain. Prospects of reimagining building and woodwork technology education by Issa and Olbina (2020) encompasses the opportunities to align the programs with industry requirements, , and ensuring that youths are equipped with the latest skills and knowledge that directly apply to the evolving needs of the industry sectors. However, prospects towards effective productivity to enhancing skills development demands appropriate strategic approaches to survive.

Strategies encompass a wide array of techniques employed by educators to enhance learning outcomes, whether through classroom management, instructional design, or assessment methodologies (Smith, 2020). Approaches indicate the theoretical concepts and formulas, which need to be applied for solving a problem. An approach is a particular way of thinking about or dealing with something. It is a general guideline on ways of performing a work that indicates the direction to proceed in handling major tasks (Krishna, 2010). Strategic approaches in the opinion of Bonk and Graham (2006) refer to well-defined, purposeful plans or methods employed to achieve specific educational objectives. Green and Davis (2020) explored the integration of digital technologies as a strategic approach for reimagining building and woodwork technology education encompasses incorporating tools like computer-aided design (CAD) and 3D printing fosters creativity, problem-solving, and a deeper understanding of complex woodworking processes. Smith and Johnson (2021) observed that comprehensive strategic approach advocate for a holistic redesign of building and woodwork technology education curriculum structures, incorporating industry input, and emphasizing practical applications. However, strategic approaches involve a thoughtful and organized use of resources, techniques, and actions to optimize learning outcomes, drive educational advancements and foster sustainable youth employability in a rapidly evolving job market.

Statement of the Problem

Youth unemployment is a pressing concern in countries like Nigeria, where many young individuals lack employability skills due to gaps between theoretical knowledge and practical experience in building and woodwork technology education. To bridge this gap, there is a need to explore the integration of functional Production Units (PUs) as a means of providing hands-on, practical training experiences. While some studies highlight the importance of mentorship and digital technologies in skills development, it remains essential to investigate how

reimagining building and woodwork technology education through PUs can effectively enhance skills development and sustainable youth employability.

Purpose of the Study

The main purpose of this study was to reimagining building and woodwork technology education through functional PUs to enhance skills development and sustainable youth employability in Lagos State. Specifically, the study determined:

1. The functional PUs required in reimagining building and woodwork technology education.
2. The prospects of reimagining building and woodwork technology education through functional PUs.
3. Strategic approaches for reimagining building and woodwork technology education through functional PUs.

Questions

The following research question guided this study.

1. What are the functional PUs required in reimagining building and woodwork technology education?
2. What are the prospects of reimagining building and woodwork technology education through functional PUs?
3. What are the strategic approaches for reimagining building and woodwork technology education through functional PUs?

Methodology

The study adopted descriptive survey research design. Descriptive survey research design according to Punch (2019) involves the collection of data at a single point in time to provide an overview of a particular situation or phenomenon. The area of the study was Lagos South-Western Nigeria. The study was carried in three tertiary institutions offering building and woodwork technology education programs, namely, university of Lagos, Yaba college of Technology, Yaba, Federal College of Education (Technical), Akoka, and selected registered building and woodwork technology industries in Yaba Local Government Area of Lagos State. The population for the study consisted of 96 respondents, made up of 72 building and woodwork technology facilitators and 24 experts from 12 registered building and woodwork technology industries. There was no sampling, because the population is of manageable size. A self-structured questionnaire developed by the researchers titled: Reimagining Building and Woodwork Technology Education through functional PUs Questionnaire (RBWTEFPUQ) on Four-point Likert scale with nominal values of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with numerical values of 4, 3, 2 and 1 respectively. The RBWTEPUQ was face-validated by three experts. A reliability coefficient of 0.86 was obtained using Cronbach Alpha method to determine the internal constituency of the RBWTEFPUQ items. All the 96 copies the RBWTEFPUQ were administered directly to the respondents by the researcher with the help of three research assistants. All the RBWTEFPUQ administered were dully completed, retrieved and the returned was 100%. Mean and standard deviation were used for answering the research questions. Any item with Mean score of 2.50 and above was regarded required as *Agreed*, while any item with Mean less than score of 2.50 was regarded not-required as *Disagreed*.

Results

Research Question 1: What are the functional PUs required in reimagining building and woodwork technology education?

Table 1
Mean and Standard Deviation on functional PUs required in reimagining building and woodwork technology education. N=96

S/N	Functional PUs Required	$\bar{X}$	SD	Remarks
1.	Building Information Modeling (BIM) and Digital Design Unit: Focuses on using BIM and digital design technologies to create detailed 3D models of buildings.	3.30	0.66	Agreed
2.	Furniture Design and Construction Unit: Learn to design and build various types of furniture, focusing on craftsmanship and aesthetic appeal	3.11	0.77	Agreed
3.	Construction Robotics and Automation Unit: Focuses on utilizing robotics and automation to automate repetitive and labor-intensive construction tasks, enhancing productivity, safety, and precision.	3.04	0.98	Agreed
4.	Woodturning Unit: Learn the craft of woodturning, using a lathe to create intricate wooden objects like bowls, vases, or spindles.	3.10	0.88	Agreed
5.	Construction Waste Management and Recycling Unit: Focuses on implementing strategies to manage and recycle construction waste, reducing landfill usage and promoting sustainability in the construction industry.	3.87	0.95	Agreed
6.	Prefabricated Construction Unit: Focuses on the production of prefabricated building components or modules off-site, which are then assembled on-site.	3.17	0.75	Agreed
7.	Cabinetry and Joinery Unit: Learn the art of cabinetry and joinery, constructing cabinets, shelves, and other wooden structures with precision and attention to detail.	3.06	0.80	Agreed
8.	Sustainable Construction Materials Unit: Focuses on researching and producing eco-friendly and sustainable construction materials to reduce environmental impact and enhance building performance.	3.04	0.98	Agreed
9.	Timber Framing Unit: teaches students the traditional technique of timber framing, where they construct wooden frames and structures using mortise and tenon joints.	3.23	0.85	Agreed
10.	Interior Design and Finishing Unit: Students explore interior design concepts and techniques, including selecting finishes, color schemes, and furniture layouts to create aesthetically pleasing interiors.	3.26	0.75	Agreed
11.	Entrepreneurship and Business Incubation Unit: develop entrepreneurial skills, including business planning, marketing, and financial management, with a focus on building and woodwork ventures.	3.21	0.83	Agreed
12.	Building Information Modeling (BIM) Unit: Explore BIM technologies to create detailed digital models that integrate design, construction, and project management information, enhancing their technical and collaborative skills.	3.21	0.83	Agreed
13.	Ergonomics and Human-Centered Design Unit: Learn about designing spaces and furniture that prioritize user comfort, well-being, and accessibility, developing skills in user-centric design.	3.06	0.80	Agreed

The data analysis presented in Table 1 showed that all 13 items had their *Mean* values above 2.50. The *Mean* values of the items ranged from 3.04 to 3.26, while the *Standard Deviation* ranged from 0.98 and 0.75 showing closeness in opinions of the respondents. This implies that the respondents agreed to all the items as functional PUs required in reimagining building and woodwork technology education to enhance skills development and sustainable youth employability.

Research Question2: What are the prospects of reimagining building and woodwork technology education through functional PUs?

Table 2
Mean and Standard Deviation on prospects of reimagining building and woodwork technology education through functional PUs. N=96

S/N	Prospects of reimagining building and woodwork technology education	$\bar{X}$	SD	Remarks
1.	Bridging theory and practice: Bridges the gap between theoretical concepts and their practical applications.	3.10	0.88	Agreed
2.	Skill development: Foster the development of technical skills, problem-solving abilities, and critical thinking relevant to the industry.	3.17	0.75	Agreed
3.	Business Skills: Provide a platform for youths to develop business skills such as project planning and marketing strategies.	3.21	0.83	Agreed
4.	Industry Relevance: Align building and woodwork technology education with industry needs and standards.	3.06	0.80	Agreed
5.	Employability: Attract to potential employers and enhancing job prospects.	3.06	0.80	Agreed
6.	Practical Application: Allow youths to apply theoretical knowledge to real-world projects.	3.04	0.98	Agreed
7.	Collaboration with Industry Partners: Provide opportunities for collaboration with construction companies and woodworking firms.	3.23	0.85	Agreed
8.	Equipment and Technology Exposure: Exposure to modern tools, equipment, and technologies used in the construction and woodworking industries.	3.26	0.75	Agreed
9.	Project Management Skills: Enable youths to develop project management skills, including time management, resource allocation, and teamwork.	3.11	0.77	Agreed
10.	Quality Control and Safety: Learn about quality control processes, safety measures, and industry regulations.	3.04	0.98	Agreed
11.	Community Engagement: Engage with the local community by undertaking projects that address community needs, fostering social responsibility and community development.	3.21	0.83	Agreed
12.	Entrepreneurship and Innovation: Explore entrepreneurial opportunities and innovative approaches within the building and woodworking industries.	3.22	0.65	Agreed

The data analysis presented in Table 2 showed that all 12 items had their *Mean* values above 2.50. The *Mean* values of the items ranged from 3.04 to 3.26, while the *Standard Deviation* ranged from 0.98 to 0.75 showing closeness in opinions of the respondents. This explains that the respondents agreed to all the items as the prospects of reimagining building and woodwork technology education through functional PUs to enhance skills development and sustainable youth employability.

Research Question 3: What are the strategic approaches for reimagining building and woodwork technology education through functional PUs?

Table 3: Strategic approaches required for reimagining building and woodwork technology education through functional PUs. N=96

S/N	Strategic approaches for reimagining building and woodwork technology education	$\bar{x}$	SD	Remarks
1.	Safety First: Implement stringent safety protocols to ensure a safe teaching and learning environment for instructors and students.	3.05	1.02	Agreed
2.	Industry Alignment: Collaborate closely with industry partners to ensure that the curriculum and projects align with current industry needs and trends.	3.50	0.73	Agreed
3.	Flexible Curriculum: Develop a flexible curriculum that allows students to choose specialized tracks or areas of interest within building and woodwork technology education.	3.06	0.83	Agreed
4.	Hands-On Learning: Prioritize hands-on learning by allocating a significant portion of the building and woodwork technology education to practical, project-based work in well-equipped production units.	3.22	0.85	Agreed
5.	Instructor Training: Invest in continuous professional development for instructors to keep them up-to-date with the latest technology and teaching methods.	3.15	0.88	Agreed
6.	Mentorship Programs: Establish mentorship programs that pair experienced industry professionals with students to provide guidance and networking opportunities.	3.03	0.91	Agreed
7.	Entrepreneurship Education: Incorporate entrepreneurship training, including business planning and financial literacy, to encourage students to start their own businesses.	3.13	0.87	Agreed
8.	Certifications: Offer industry-recognized certifications or qualifications to enhance graduates' employability.	3.05	0.94	Agreed
9.	Work-Integrated Learning: Facilitate internships, co-op programs, or apprenticeships with local businesses to provide students with real-world experience.	3.13	0.90	Agreed
10.	Community Engagement: Encourage students to work on community-based projects, such as affordable housing or disaster relief efforts, to enhance their sense of social responsibility.	3.06	0.83	Agreed
11.	Technology Integration: Embrace modern technologies like CAD software, 3D printing, and automation to prepare students for industry advancements.	3.22	0.85	Agreed
12.	Soft Skills Training: Include soft skills development in the curriculum, focusing on communication, teamwork, problem-solving, and adaptability.	3.15	0.88	Agreed
13.	Sustainability Focus: Emphasize sustainable building practices and eco-friendly materials, preparing youths for environmentally conscious construction careers.	3.57	0.82	Agreed

The data in Table 3 indicated 13 items with their *Mean* values above 2.50. The *Mean* values of the items ranged from 3.03 to 3.57, while the *Standard Deviation* ranged from 0.91 to 0.82, showing closeness in the opinions of the respondents. This indicated that all the items were agreed upon as strategic approaches for reimagining building and woodwork technology education through functional PUs to enhance skills development and sustainable youth employability.

Discussions of Findings

The results in Table 1 indicated 13 items of functional PUs required in reimagining building and woodwork technology education. The functional PUs include building information modeling (BIM) and digital design unit, furniture design and construction unit, construction robotics and automation unit, woodturning unit, construction waste management and recycling

unit, among others. These are in agreement with the view of Mital and ElMaraghy (2015) who observed that functional production units refer to specific sections or departments within an organization or educational institution that are designed to efficiently produce, assemble, or process goods or services. These findings also in line with the work of Seymour (2005) who argued that production units in building and woodwork technology education represent modular or compartmentalized segments of the curriculum that focus on distinct areas of woodwork and construction.. The findings and the opinions of the authors above helped to justify the findings of this study on the functional production units required in reimagining building and woodwork technology education to enhance skills development and sustainable youth employability.

The results of the findings in Table 2 disclosed that all the 12 items were agreed upon as prospects of reimagining building and woodwork technology education through production units. These prospects of reimagining include bridging theory and practice, skill development, industry relevance, employability, among others. These findings are in agreement with the opinion of the St-Jacques (2017) who contended that prospects denote the expected opportunities and advancements available within a particular career or profession, considering factors such as job availability, growth potential, and salary ranges. These findings also agreed with the study of the

Issa and Olbina (2020) who posited that prospects of reimagining building and woodwork technology education encompasses the opportunities to align the programs with industry requirements, and ensuring that youths are equipped with the latest skills and knowledge that directly apply to the evolving needs of the industry sectors. The findings and the views of the authors above helped to add value to the findings of this study on the prospects of reimagining building and woodwork technology education through production units to enhance skills development and sustainable youth employability**.**

The findings of the study in Table 3 revealed the 13 item as strategic approaches for reimagining building and woodwork technology education through production units. These strategic approaches include safety first, industry alignment, flexible curriculum, hands-on learning, instructor training, among others. The findings agreed with the opinion of the Bonk and Graham (2006) who asserted that strategic approaches refer to well-defined, purposeful plans or methods employed to achieve specific educational objectives. The findings were also in consonance with the view of the Green and Davis (2020) who explored that the integration of digital technologies as a strategic approach for reimagining building and woodwork technology education encompasses incorporating tools like computer-aided design (CAD) and 3D printing fosters creativity, problem-solving, and a deeper understanding of complex woodworking processes. The findings and agreement of the authors above gave credence to the result of the present study on strategic approaches for reimagining building and woodwork technology education through production units to enhance skills development and sustainable youth employability.

Conclusion

Based on the findings of the study, it was established that that integrating functional PUs into building and woodwork technology education holds significant promise for addressing the challenges of youth unemployment and skills development. The research findings indicate that PUs provide a practical and hands-on learning experience, bridging the gap between theoretical knowledge and real-world application. This approach empowers young individuals with the skills and competencies needed to thrive in the construction and related industries, ultimately contributing to sustainable youth employability. Consequently, building and woodwork technology education remains a vital ingredient for enhancing skills development and sustainable youth employability in Lagos State.

Recommendations

Based on the research findings, the following recommendations were proposed:

1. Functional PUs in building and woodwork technology education should focus on using Building Information Modeling (BIM) and Digital Design technologies to create detailed 3D models of buildings. This approach aims to enhance skills development and promote sustainable youth employability within tertiary institutions in Lagos State.
2. Reimagining building and woodwork technology education through functional PUs should foster the development of technical skills, problem-solving abilities, and critical thinking relevant to the industry. The goal is to enhance skills development and sustainable youth employability within tertiary institutions in Lagos State.
3. Building and woodwork technology education should embrace modern technologies, such as CAD software, 3D printing, and automation, to prepare students for advancements in the industry. This preparation is crucial for enhancing skills development and sustainable youth employability within tertiary institutions in Lagos State.

References

Allison, P. & Susan, P. (2015). *Reimagining the future of learning: Personalized learning.* International Association for K-12 Online Learning (iNACOL).

Asa, K. J., & Kudehinbu, O. O. (2014). Youth empowerment as a veritable tool for peace and national development. *World Educators Forum*, 4(1), 1-7. http://www.globalacademicgroup.com/journals/world

Bloch, M. (2018). Functional thinking for value creation: *Proceedings of the 3rd CIRP International Conference on Industrial Product-Service Systems, IPS2*. Springer.

Bonk, C. J., & Graham, C. R. (2006). *The handbook of blended learning*: Global Perspectives, Local Designs.

Brown, L., & Jones, M. (2020). Skills development in the digital age. *Journal of Career Development*, 47(5), 457-470.

Brown, P., Hesketh, A., & Williams, S. (2003). Employability in a knowledge-driven economy. *Journal of Education and Work*, 16(2), 107-126.

Chen, L. (2018). *Enhancing efficiency and productivity in building and woodwork technology education: Leveraging technological advancements*. Tech-Edu Innovations.

Ching, F. D. K. (2019). *Building construction illustrated*. Wiley

Dei-Tumi, J. (2011). National youth entrepreneurship policy in Ghana speech delivered during a workshop organized. *Institute of Continuing and Distance Education*, University of Ghana.

Dillard, J., Dujon, V., & King, M. (2017). Understanding the social in sustainability: A review of accounting, accountability, and responsibility. *Accounting, Auditing & Accountability Journal*, 30(7), 1493-1517.

Elkington, J. (2018). 21st century megatrends: Perspectives from a frontier of sustainability. *Environmental Quality Management*, 27(1), 23-32.

Garcia, A. (2022).*Unveiling future opportunities*: *Understanding prospects in building and woodwork education*. Future Trends Publications.

Green, E., Davis, K. (2020). Building the Future: Innovations in Woodwork Technology Education. TechEdu Publishers.

Grilo, E. (2017). *Advancing woodwork and building technology education: Integrating functional production units.* Academic Skills Publishers.

Hylton, B. (2018). *Illustrated cabinetmaking: How to design and construct furniture that works.* Fox Chapel Publishing.

Hylton, B. (2020). *Building and woodwork technology education: An integrated approach.* Goodheart-Willcox Publisher.

Issa, R. R. A. and Olbina, S. (2020). *Building information modeling: Applications and practices*. Routledge.

Kim, J., & Lee, S. (2023). Skills development for entrepreneurship and innovation. *Journal of Business Venturing*, 38(2), 245-257.

Kimmons, R., & Hall, L. (2016). *Active learning strategies in higher education: Teaching for leadership, innovation, and creativity*. Springer.

Korn, P. (2010). *Woodworking basics: Mastering the essentials of craftsmanship*. Taunton Press.

Krishna, A. (2010). *What are the differences between method and approach?* http://www.enotes.com/homework-help/what-diffences-between-method-approach-some-139657. Enotes Press.

Liker, J., & Meier, D. (2008). *The Toyota way fieldbook*: *A practical guide for implementing Toyota's 4ps*: McGraw-Hill Education.

Maclean, R., & Majumdar, S. (2019). *Technical and vocational education and training (TVET) and the development of skills and competencies*. Springer.

Mital, A., & ElMaraghy, H. A. (Eds.). (2015). Product and process design for quality, economy and reliability: *Proceedings of the 6th International Conference on Product and Process Design (PPD 2015),* December 2-5, Mumbai, India. Springer.

Osita, O. H. (2013). Entrepreneurial skill development in woodwork trade: A panacea to the challenges of youth unemployment. *Mediterranean Journal of Social Sciences MCSER* Publishing, Rome-Italy, 4(8), 99-105.

Pathak, R. P. (2018). *Technical and vocational education and training: Issues, concerns, and prospects.* Bloomsbury Publishing India.

Punch, K. F. (2019). *Survey research: The basics*. Sage Publications.

Rezgui, Y. (2015). Building technology education: Toward an integrated approach. *Journal of Professional Issues in Engineering Education and Practice,* 141(2), 29-37.

Seymour, K. (2005). *Succeeding with technology*. Goodheart-Willcox Publisher.

Smith, R. (2019). *Effective woodwork technology education*: Practical Approaches for Learning Spaces. Routledge.

Smith, A., Johnson, R. (2021). *Redefining education: A comprehensive approach*. Educational Innovations Press.

Smith, A. (2020). Bridging the gap: Exploring public-private partnerships in education. *Journal of Educational Partnerships,* 5(1), 75-89.

St-Jacques, P. (2017). *Career development, employment, and disability in rehabilitation: From theory to practice*: Springer Publishing Company

Wang, Y., & Li, X. (2021). Reimagining technical and vocational education and training through production units and consultancy services. International Journal of Training Research, 19(1-2), 129-141.

Zhang, Q., & Chen, L. (2022). The role of digital technologies in reimagining technical and vocational education and training. *Journal of Vocational Education and Training,* 74(1), 23-36.