International Journal of Vocational and Technical Education Research
Vol.8, No.2 pp.9-29, 2022
Print ISSN: ISSN 2059-1187,
Online ISSN: ISSN 2059-1195

Wood Artisan Training and Job Prospects in Sekondi Takoradi -The Hope, The Helplessness, And The Hatred

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Citation: Samuel Adentwi Bentum, Frederick Narkwa Anderson and Solomon Obuobisa Ayeh (2022) Wood Artisan Training and Job Prospects in Sekondi Takoradi -The Hope, The Helplessness, And The Hatred, *International Journal of Vocational and Technical Education Research*, Vol.8, No.2 pp.9-29

ABSTRACT: *The paper aimed to investigate the wood artisanal education and training designed for the youth of the Sekondi-Takoradi Metropolis and the prevailing job prospects vis-a-vis the modern technologies, tools, equipment and materials required in the (artisanal) training and manufacturing of world-class wood products. The paper found that the wood market is available to wood artisans and wood products in the Metropolis. The quantitative design approach was applied as the work was based on information obtained from wood artisans and professionals, connoisseurs, curators and wood sellers. The primary information was acquired through interaction, observation and field survey, while secondary information was obtained from literary sources. The purposive sampling technique adopted the analytical method to analyse the data.The results showed that woodcraft artisans in the Metropolis lacked the requisite education and training in modern machinery and technological know-how needed to meet the International Standard Order (ISO) and the increasing taste of the prospective woodcraft market.The paper concludes that Sekondi-Takoradi will be threatened with employable woodcraft knowledge, skills and competencies required to meet the Metropolis's woodcraft market and compete favourably with their Western and Asian counterparts.*

KEYWORDS; wood, artisan, education, training, technology.

INTRODUCTION

Wood artisanal has been one of the traditional trades of the African and Ghanaian people. It is noted that most regions in Ghana abound with forest belts that have numerous species of hard and soft timbers suitable for wood, such as plank, lumber, plywood and veneer production. Several large, medium and small-scale wood processing firms are located within Sekondi-Takoradi. After processing their timber into wood members for export, these firms reserve

some for local consumption and further processing into woodcrafts; furniture products, industrial and domestic construction, utensils, accessories and art and craft for domestic and foreign markets (Fairbanks, 2021). Sekondi-Takoradi, as a coastal city, is endowed with a railway and harbour that facilitate the export of wood products and other raw materials.

Bentum (2020) defines Wood crafting as the act of creating functional and aesthetical forms from wood materials to meet the required standards (ISO) and concepts of human need and satisfaction. Since man's needs are insatiable, there is always the possibility of requiring more innovative and sophisticated wood items from wood professionals and artisans to make life easy and satisfying (Bentum, 2022). With the advent of the industrial age and the subsequent digitisation of the technological era, most Ghanaian wood firms and artisans are faced with stiff competition from foreign firms hence, leading to their shut down or relocation into the hinterlands. Consequently, with the introduction of state-of-the-art wood processing equipment and tools such as Dupli-carver, engravers and lately the Computerised Network Control (CNC) machines into the global space, the wood industries production capacities have declined greatly in Sekondi-Takoradi forcing a dip into the wood artisanal job prospects. Bentum (2020) equally indicates that the introduction of alternative materials such as plastics, fibre ferrous and non-ferrous metals in the furniture and construction industry and their less laborious processes has pushed wood to be less preferred. Hence the perceived hope leads to helplessness and hatred for the trade.

The Objectives of the Research

- The paper aimed to investigate the current wood artisanal education and training designed for the youth of Sekondi-Takoradi Metropolis.
- The paper attempts to identify the prevailing production technology, equipment, tools, and materials used for the training of wood artisans.
- The paper also tries to identify the job prospects and market opportunities available to wood artisans/professionals in the Metropolis.

Statement of the Research Problem

In recent times, the availability and supply of skilful and creative wood artisans/professionals have become a major challenge to the wood industry in the Metropolis. Also, the introduction and adoption of cutting-edge technological know-how, equipment and tools for wood artisanal training have almost eluded the Metropolis. Hence, the subsequent low turn out of high precision quality woodcraft to meet the local woodcraft market, compete with foreign firms in the Metropolis and drive in export, all leading to the low employment opportunities for wood artisans/professionals in the Metropolis.

Scope of the research

This research is limited to the education and training, prevailing technology, equipment, tools and materials, job prospects of wood artisans/professionals and market trends of the wood industry in the Sekondi-Takoradi Metropolis.

LITERATURE REVIEW/THEORETICAL UNDERPINNING

Educational theorist suggests an impressive variety of educational approaches to the art and science of teaching and learning to determine what works best for whom. Hence, learning

requires bringing together personal and environmental experiences and influences for acquiring, enriching or modifying one's knowledge, skills, values, attitudes, behaviour and worldviews (Fairbanks, 2021). Primarily, learning theories teachers rely on; behaviourism, cognitive, constructivism, humanism, and connectivism (International Bureau of Education, 2011). Also, learning theories includes transformative, social and experiential. Additionally, cognitive, affirmative and psycho-motor skills are essential tools required in the training of wood artisans to become valuable and resourceful professionals. Therefore, understanding learning theories can result in various outcomes, from improving communication between learners and facilitators to determining what learners acquire (Saunders L., & Wong M., 2020).
Technology comes from the Greek term *techne* (art or craft-knowledge), and philosophical views on technology can be traced to the very roots of western philosophy. *Techne* implies that which arises as an imitation of nature. Philosophers in Greek antiquity relate technology to the *'making of things'* (cf. Parry, 2008). To them, the terms "technique" and technology are embedded in techne. In Plato's Timaeus, the world is depicted as being the work of a divine craftsman (Demiurge) who created the world in accordance with eternal forms as an artisan who makes things using blueprints. Moreover, Plato argues in the laws that what a craftsman does is imitate this divine craftsman. (Misa, T.J., 2009)

Sekondi-Takoradi is a city on the west coast of Africa with a well-structured railway network that moves into forest, mining areas, and the bigger cities. It also has a maritime system and harbours that facilitate the export of timber (logs) and wood products (lumber, planks, plywood and veneer) and the import of woodcraft from Europe and Asia. The Metropolis had numerous timber processing firms known for the constant supply of quality, treated and seasoned wood members and wood off-cuts to wood artisans, woodcraft companies and wood lumber sellers/markets (Bentum *et al.,* 2020). The wood processing firms offer the material and the technological support to the artisans and their woodcraft centres or institutions to provide the necessary woodcrafts needs of the Metropolis.

Has the educational system and the wood industry in the Sekondi-Takoradi Metropolis supported the wood artisans with the hope or the helplessness or the hatred to the betterment of her youth? Webster's Seventh Collegiate Dictionary (1967) defines education as the knowledge and development resulting from a process— teaching and learning. It further defines technical as being skilful and having special practical knowledge and competencies to perform a task. Therefore, technical education may be seen as the teaching and learning special practical knowledge and skill. This type of education involves the use of the mind and hands. It is therefore perfect to note that *the heart, the mind, and the hands* which is the slogan and mantra of the Takoradi Technical University, a leading engineering and innovation university that offers technical, vocational and entrepreneur training to the youth of Sekondi-Takoradi and beyond emphasises the aspirations of the artisans for a better future (University TTU, 2021).

The artisanal educational system and wood training institutions in Sekondi-Takoradi Metropolis and their capacity evolve around— enrolment, retention, progression, graduation, redraw and abandonment of trainees and the staffing or faculty members therein. Types of Technical Education in Ghana and Sekondi-Takoradi are (1) Western Academism and Educational System as against (2) Traditional African Academism and Apprentice System (Bentum *et al.,* 2020). The levels of technical educational institution inspired by the Western

Academism Educational System include; (a) Basic Technical Institutions; Pre-School, Pre-secondary Schools, Pre-technical Schools, Basic Schools, Vocational/Technical Institutes, (b) Secondary/Technical Institutions; Senior High School, Senior Technical Schools, Vocational/Technical Institutes and Polytechnics, and (c) Tertiary technical Institution; Polytechnics/ Technical Universities and higher Professional Institutes or Bodies (Bentum *et al.,* 2020). These set-ups offer psycho-motor, affirmative and cognitive skills in woodcraft education.

The levels of technical educational institution practised by the Traditional African Academism and Apprentice System evolve around (a) Father or Mother to Son or Daughter, (b) Elder Siblings to Younger Siblings and (c) Master or Mistress to Boys and Girls. All these levels provide the youth of Sekondi-Takoradi the opportunity to be equipped mentally and technically through the formal and functional method of education for their future socio-economic empowerment (Bentum *et al.,* 2020).

Sekondi-Takoradi is known to have some well-structured state and privately-owned academic institutions that offer Tertiary Programmes in the areas of Science, Technology, Engineering, Mathematics and Aesthetics (STEMA). The Metropolis is endowed with numerous Second cycle programmes from Senior High Schools (SHS), Senior High and Technical Schools (SHTS), Senior Technical Schools (STS), and Technical and Vocational Education and Training (TVET II) Programmes. There are also Lower version programmes that offer Certificates in (BECE, TVET I, Skills Development and Transfer Programmes) and the numerous privately-owned workshops/studios that provide apprentice artisanal training to the youth. All these educational programmes allow for the impartation of both hard and soft skills needed to drive the wood industry in Sekondi-Takoradi. (Bentum *et al.,* 2020)

Technical education at the tertiary level has had a progressive trend both in Africa and elsewhere. Jose-Gines Mora, J (2001) outline the history of universities in the Middle Ages as the autonomous corporations of students and master governed by internal rules set by the academic community that is financed by the contributions from students and has small independent elitist governed by an elected leader (rector). This educational system is in line with the traditional African academism and apprentice system that allows the masters to impart knowledge and skills to their apprentices (students) by taking fees for the training. The German system saw universities as scientific research centres with civil servants as professors. In contrast, the French Napoleonic system allowed the state to decide on the academic programmes and objectives for the universities to serve the state by educating its people and providing economic growth. The British Anglo-Saxon model considered universities as self-governing institutions with state funding, but the American model saw the universities as corporate managerialism. Universities in Ghana are fashioned along the lines of the American-British-German mixture, with the state providing direction and funding for the state-owned institutions while the corporate managerial practices are seen among the private-own and some state-own. Technical universities/polytechnics in Ghana are established to provide technical/vocational innovation and entrepreneur knowledge and skills to the teeming youth. (Bentum *et al.,* 2020)

Ministry of education (1993) that established the tertiary polytechnics now technical universities enjoins them to organise Industrial Attachment (Internship) as a mandatory course

for all levels of technical university programmes. This enables students to have a feel of the world of work. It also makes students familiar with the culture of work and work environment. Likewise, technical university students have the opportunity to be employed while at school. The new media has continually exposed her viewer to the 'Do It Yourself (DIY) videos for free technical and technology education system, thereby generating hobby traits and domestic services, a system of skills training, and even establishing home studios, and workshops and laboratories for experiments and economic gains. DIY has allowed several persons to acquire competencies in basic and advanced technical skills for the better.

Education theorists dwell on the following masts; 1) cognitive; these are the core skills your brain uses to think, read, learn, remember, reason, and pay attention. 2) affirmative; any behaviour attribute such as knowledge, skill-set, teamwork, leadership skills, technical know-how etc., which contribute to the development of an individual; and 3) psycho-motor; learning is the relationship between cognitive functions and physical movement. It demonstrated physical skills such as movement, coordination, manipulation, dexterity, perception and physical awareness (Sitharaman K'taka, Piyush Goyal & Maha, 2022).

The philosophy of technology is a sub-field that studies the nature of technology and its social effects. Philosophical discussion of questions relating to technology (its Greek ancestor *techne*) dates back to the very dawn Western philosophy. The phrase "philosophy of technology" was first used in the late 19th century by German-born philosopher and geographer Ernst Kapp, who was published in a book titled "Element of a Technology (Kapp, 1877). The western term 'technology' comes from the Greek term *techne* (art or craft knowledge), and philosophical views on technology can be traced to the very roots of western philosophy. A common theme in the Greek view of *techne* is that it arises as an imitation of nature (for example, weaving developed out of watching spiders). Philosophers in Greek antiquity relate technology to the *'making of things'*. To them, the terms "technique" and technology have their roots in the ancient Greek notion of "*techne"*. (art, or craft-knowledge), that is the body of knowledge associated with the particular practice of making (cf. Parry,2008). Originally, the term referred to a carpenter's craft-knowledge about making objects from wood (Fischer. 2004:11; Zoglauer, 2002: 11), but later it was extended to include all sorts of craftsmanship in all facades of socio-economic and political lives. In Plato's Timaeus, the world is depicted as being the work of a divine craftsman (Demiurge) who created the world in accordance with eternal forms as an artisan who makes things using blueprints. Moreover, Plato argues in the laws that what a craftsman does is imitate this divine craftsman.

According to Britannica (2022), technology is how we apply scientific knowledge for particular purposes. This includes automated and computerised machines and techniques and processes (like the way we produce a wood product). Technology is the continually developing results of accumulated knowledge and application in all techniques, skills, methods and processes used in industrial production and scientific research (Wikipedia, 2018). Additionally, technology is seen by (Dictionary, Collins English, 2012) as the branch of knowledge that deals with the creation and use of technical means and their interrelation and scientific research. Therefore, technology may be considered to be anything created, not naturally occurring, that improves a process outcome or understanding. Technological advancement in the wood industry is world-shattering and fast embraced by all cultures. Consequently, with the introduction of state-of-the-art wood processing equipment and tools such as Dupli-carvers, engravers and lately, the

Computerised Network Control (CNC) machines into the global space have been mined bobbling. These computers in the wood processing lines have enhanced standardisation and offer higher precision quality and product satisfaction to crafters and end-users.
Adupong R. (2011), in a research report, implored the ruling class to assist crafters/manufacturers of local wood products by ensuring that raw materials are available for the local market. Local manufacturers are to increase their capacity to meet local demand; take advantage of the increasing population in the region due to oil production whilst noting that consumers intend to buy their products without compromising on quality standards. Hence the reliance on imported high-quality wood crafts. Adupong R. (2011) further indicated that, though imported furniture is expensive, it is attractive with modern design. He also reiterates that the locally made wood crafts/furniture are less expensive but relatively less attractive with its quality depends on the price paid by customers, which further determines the choice of materials used but lacks modern machinery and other materials for better finishing. He, therefore, infers that design is of the essence when one sets out to create, fashion, execute, or construct, and such must be according to a set plan.

Design is the process of imagining and planning the creation of objects, systems, buildings, vehicles, furniture and others. It is also said to be the creation of solutions for people (www.strate.education). Design is a plan or specification for the construction of an object or system or for the implementation of an activity or process or the result of that plan or specification in the form of a prototype, product or process (wikipedia). Wood artisanal training requires rigorous design and aesthetic education for revolutionising the needed production capacity and customer satisfaction of the Metropolis and beyond.

METHODOLOGY

The study employed the survey method to implore opinions and perceptions of the respondents such as Wood educators, Wood artisans (sculptors, carpenters, furniture artists), Wood-sculpture and art-furniture connoisseurs (buyers), Wood curators (historians and gallery or showroom managers) and wood boards, planks and products sellers (marketers) in the Sekondi-Takoradi Metropolis. A well-structured Questionnaire was the main data collection instrument.

The study employed the quantitative research technique with close-ended questions, which were administered to support the instrument designed. Simple random sampling methods were used to ensure that each instrument was relevant to the assessable population. The target population was Sekondi-Takoradi and had an assessable sample size of 150 respondents that included 20 woodcraft educators, 50 woodcraft trainees, 50 woodcraft artisans/professionals, and 20 woodcrafts buyers /wood curators and 10 wood products sellers. The IBM SPSS Statistics software was used for the data entry and analyses of the data gathered from the field.

RESULTS AND FINDINGS

Respondents
Wood-craft educators/trainers; 20
Wood-craft trainees/apprentices: 50
Wood-craft artisans/professionals: 50 (wood-sculptors, woodcrafters, carpenters, wood-furniture artists),

Table 1: Woodcraft Educators and Trainers

Response	Frequency	Percent (%)
Educational or Trainers Level		
Tertiary	10	50.0
Secondary	2	10.0
Basic	3	15.0
Apprenticeship	4	20.0
Self-taught	1	05.0
Quality and adequacy of training		
Adequate	10	50.0
Not adequate	10	50.0
Curricula and Pedagogy for training		
Below standard	7	35.0
Standard	10	50.0
Above standard	3	15.0
Equipment and tools for training	14	70.0
Outdated and obsolete	6	30.0
Automated and computerized		
Materials and Accessories for training		
Adequate	6	30.0
Not adequate	14	70.0
Internship during training		
Structured	13	65.0
Unstructured	7	35.0
Employment opportunity for trainers or graduates		
Available	11	55.0
Not available	9	45.0

Wood-craft connoisseurs (buyers)curators and marketers (historians and gallery managers):20
wood sellers (lumber and veneer): 10
total = 150

Source: Authors' Fieldwork (2021)

The survey sought to investigate the trainer's educational levels and competencies that exist in the Sekondi-Takoradi woodcraft educators and trainers and their effect on what woodcraft artisans or professionals undergo in order to gain the requisite knowledge and skills for the woodcraft market, further training and practice. In all, 20 trainers were sampled.

The table indicates that 10 respondents representing 50% of the woodcraft educators or trainers went through the tertiary wood training institute in Sekondi-Takoradi and the country, and 2 respondents representing 10% of the woodcraft educators and trainers went through secondary or technical training institutions. Also, out of 20 respondents, which were woodcraft educators and trainers, only 3,

representing 15%, obtained basic education, 4 respondents had apprenticeship training constituting 20%, and one representing 5% was self-taught.

The analysis sought to determine the quality and adequacy of training acquired by the woodcraft educators and trainers during their training. The result shows that 10 respondents representing 50%, were of the view that the training they had was of quality and adequate, while the other 10 respondents constituting 50%, equally agreed they had not been trained adequately with regards to concept and content delivery and the quality skills training.

However, the curricular and pedagogy used in training the woodcraft educators and trainers in the metropolis, 7 respondents representing 35% of the trainers stated that the curricula and the pedagogy adopted for their training were below standard, 10 of the woodcraft educators and trainers representing 50.0% emphasised that it was standard in terms of capacity building in concept and content delivery and aided quality skills training, while 3 woodcraft educators and trainers representing 15.0% were of the view that it was above standard. The Pedagogy could offer opportunities for woodcraft educators and trainers in the metropolis to impart skill and knowledge in artisanal training to improve woodcraft productions.

It was also noted that, in terms of equipment and tools used in the training of the woodcraft educators and trainers, 14 of the respondents representing 70.0%, indicated that their woodcraft training depended on existing outdated and obsolete machines and, in most cases, manually inspire tools. 6 representing 30.0% of the respondents had a feel of some modern multi-purpose and also digitised machines. This group can deliver to their trainees the usage of digitised and modern equipment for designing and producing standard world-class woodcrafts.

Further analyses show that, out of the 20 woodcraft educators and trainers surveyed, 30.0% cited that the materials and accessories available for their training were adequate, while the remaining 70.0% representing the majority of respondents, were of the view that they could not have access to material and accessories while undergoing training as trainees.

Table 1 equally shows internship as another means through which woodcraft educators and trainers received industrial training in woodcraft design and production when they were in training. 13 respondents representing 65.0% of the woodcraft educators and trainers, did not embark on any structured internship in their training, while 35.0% of woodcraft educators and trainers had structured internships in the course of the training.

Further analysis ascertains the employability of woodcraft trainers or graduates in the metropolis. 55.0% of woodcraft educators and trainers agreed that there are employment opportunities available for trainers since they were equipped with the right technological know-how and skill, whereas 45.0% were of the view that there were no employment opportunities available for the trainers or graduates because of lack of technological know-how, concept, contents, and competencies in modern woodcraft knowledge and skills.

Table 2: Woodcraft Trainees/Apprenticeship

Response	Frequency	Percent (%)
Educational or Trainees Level		
Tertiary	20	40.0
Secondary/Tech	05	10.0
Basic	10	20.0
Apprenticeship	15	30.0
Quality and adequacy of training		
Adequate	26	52.0
Not adequate	24	48.0
Curricula and Pedagogy of training		
Structured	16	32.0
Unstructured	34	68.0
Equipment and tools for training		
Outdated and Obsolete	38	76.0
Automated and Computerized	12	24.0
Materials and Accessories for training		
Adequate	15	30.0
Not adequate	35	70.0
Internship during training		
Structured	31	62.0
Unstructured	19	38.0
Employment opportunities for trainees/graduates		
Available	49	98.0
Unavailable	1	2.0

Source: Authors' Fieldwork (2021)

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20%, and one representing 5% was self-taught. The analysis sought to determine the quality and adequacy of training acquired by the woodcraft educators and trainers during their training. The result shows that 10 respondents representing 50%, were of the view that the training they had was of quality and adequate, while the other 10 respondents constituting 50%, equally agreed they had not been trained adequately with regards to concept and content delivery and the quality skills training.

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Table 3: Woodcraft Artisans/ Professional

Response	Frequency	Percent (%)
Educational Level		
Tertiary	25	50.0
Secondary	5	10.0
Basic	10	20.0
Apprenticeship	10	20.0
Quality and adequacy of training		
Adequate	15	30.0
Not adequate	35	70.0
Equipment and tools		
Outdated and Obsolete	40	80.0
Automated and computerized	10	20.0
Sources of Wood		
Sawmill	20	40.0
Bush-Cut	30	60.0
Quality of wood		
Treated	20	40.0
Untreated	30	60.0
Market for woodcrafts		
Available	40	80.0
Unavailable	10	20.0

Source: Authors' Field work (2021)

The research examined the educational background, the training regime systems, materials and market opportunities that exist within the Sekondi-Takoradi Metropolis for the 50 woodcraft artisans or professionals' education and training. Table 3 indicates that 25 respondents represent 50% of the woodcraft artisans and professionals with the tertiary certificate. Also, 5 respondents representing 10% of the woodcraft artisans and professionals have second cycle education and training. Additionally, 10 respondents have a basic certificate, while the remaining 10, representing 20%, have the apprenticeship training certification or testimonial. This indicates that there are fewer woodcraft trainees in the second cycle than in the tertiary and apprenticeship training in the Sekondi-Takoradi Metropolis.

The findings revealed the quality and adequacy of training possessed by the woodcraft artisans and professionals in their training. The result shows that 15 respondents representing 30%, were of the view that their training had quality standards and the frequency of the training was high. It was also revealed that 35 respondents covering 70%, approved and said that they had not been trained adequately and that their quality was not up to their Western and Asian counterparts.The field study indicated that the equipment and tools stock used for the training of the woodcraft artisans and professions within their learning period was not the modern type nor of the digitized nature. 40 of the respondents representing 80.0%, mentioned that for their woodcraft, the equipment and tools available at their time were outdated and obsolete and were manually operated. As low as 10 respondents opined that some modern and

digitized machines were shown to them during their training. This group, we can say, has the exposure to modern equipment and can deliver somehow to their customers wish.

The research delved into the source of wood as a material for wood craft training. It was observed that out of the 50 respondents sampled, 20, representing 40%, said that the processed woods made available for their training were obtained from the sawn mills. Within the Metropolis. The remaining 60% said the source of their woods was mainly from the illegal bush-cut vendors.

The findings also showed that 40% of the training centres had access to treated and well-seasoned wood members for their training, therefore, offering them a better understanding of how wood reacts to the weather and environment. It was further found that hopping 60% of the professionals and artisans did not have the opportunity to have a feel of treated and seasoned wood during their training. Therefore, the availability of quality wood for professional and artisanal training was on the low side. The research looked into the availability of market share of woodcraft in the Metropolis during and after training. The survey depicted that 80% of the respondents reiterated a need for their woodcraft within and outside their local space. It was only 10 of the respondents made 20% that was speculative of their local market share.

Table 4: Woodcraft Buyers and Curators

Response	Frequency	Percent (%)
Training Background or System		
Adequate	10	50.0
Not adequate	10	50.0
Quality of woodcraft		
Available	10	50.0
Unavailable	10	50.0
Adequacy of woodcraft		
Available	10	50.0
Unavailable	10	50.0
Equipment and tools		
Outdated and obsolete	15	75.0
Automated and Computerized	5	25.0
Market for woodcrafts		
Available	10	50.0
Unavailable	10	50.0

Source: Authors' Field work (2021)

The survey explored the buyers' and curators' training background, knowledge of precision quality standards, state of the tools and equipment adopted for woodcraft production, frequency of the woodcraft supply and the market share of locally produced woodcraft in the metropolis. 20 of such practitioners interacted during the research period. Out of the 20 respondents sampled, 50% had formal education in the buying, franchising and curating of the woodcrafts produced in the metropolis. The remaining fifty per cent had little or no formal training in the business of the buying, selling and marketing of these woodcrafts. They were into it out of passion.

The group were asked about their knowledge of the quality of woodcrafts turned out by woodcraft producers in the metropolis. 50% of the respondent reiterated that the wood crafts were of high quality, while the remaining 50% reacted otherwise. On the adequacy of the supply of the woodcraft into the market or end users, 50% of the respondents were very positive that the woodcraft is always available, but the other 10 respondents felt that it was always difficult to get requests met by the wood artisans and professionals.

75% of the respondents indicated that obsolete equipment and manual-operated tools dominate in the training regimes and their professional practice. Only 5 respondents representing 25%, said the woodcrafters depend mostly on modern and digitized equipment and tools for their woodcraft production. In terms of the marketability of the locally produced woodcrafts in the metropolis, 10 of the respondents said the market for the woodcraft is available, while the other 10 said the market for the local woodcraft is bleak.

Table 5: Wood Sellers

Response	Frequency	Percent (%)
Sources of wood		
Sawmill	3	30.0
Bush-cut	7	70.0
Quality of wood		
Treated	2	20.0
Untreated	8	80.0
Adequacy of quality wood		
Available	4	40.0
Unavailable	6	60.0
Cost of wood		
Expensive	5	50.0
Moderate	3	30.0
Cheap	2	20.0
Market for wood products		
Available	4	40.0
Unavailable	6	60.0

Source: Authors' Field work (2022)

The survey studied the source of wood (boards and planks), the quality of wood and its supply, the cost of wood as raw material and the market for the wood products within the Sekondi-Takoradi Metropolis. 10 wood sellers within the Metropolis were surveyed, and their opinions were sought after. 3 of the wood seller indicated that the source of their wares is from the wood processing firm, while the remaining 7 representing 70%, said their wood source was from the bush-cut or unorthodox small-scale wood processing set-ups.

2 of the respondents mentioned that they sell only treated and seasoned wood boards and planks, but a majority of 8 respondents making 80%, relied solely on the unorthodox bush-cut wood board and planks that are neither treated nor properly seasoned. 4 of these respondents indicated that the supply of the wood boards was regular and available, while the majority of 6 expressed that the supply was unavailable. In terms of the cost of the wood that is available for artisanal usage 5 of the respondents said they were expensive, and the remaining 5 said they are moderate and cheap. 2 respondents who said it's cheap relied on factory off-cuts or discarded wood parts. The research also revealed that the majority of the wood seller, 6 representing 60%, were of the view that locally crafted wood product has very little space in the woodcraft market in the Metropolis. This to them may be due to the scarcity, quality, adequacy and price of the wood as a material for woodcraft production and sales. On the other hand, 4 representing the minority showed that the market for the local wood product was available due to some advancements in technology, design and finishing in wood crafting.

DISCUSSION

The Current Wood Artisanal Education and Training Designed for The Youth of Sekondi-Takoradi Metropolis

The discussion centred on how the wood industry has been belaboured by situations and decisions that affected and influenced the knowledgeable, competent and adequate manpower demand and the material(s) for producing quality woodcrafts to meet the market within and beyond the Sekondi-Takoradi Metropolis. The research has shown that the Metropolis has established educational institutions from basic to tertiary levels. It also has both the Western and Traditional African modules of woodcraft training into artisanal and professional competencies. The research observed that, currently, there is no single basic and second-cycle institution that runs woodwork as an academic programme in the Metropolis. Instead, woodwork is only offered at the tertiary level. Even at this level, it was observed that the enrolment was very low as compared to programmes such as metal work, concrete work, science and humanities. Because woodwork education is virtually absent in the lower levels, there is very little attraction from the basic graduates to the woodcraft apprenticeship centres. The *massification* of Western education and the increasing numbers in grammar and humanities education, coupled with the neglect, disregard and disrespect for technical and vocational education and training by the authorities and the community, has created a dent in wood crafting. Such decisions further cumulate into the low turn-out of the wood artisanal and professional stock needed to drive the woodcraft production in the Metropolis. In a media interaction on the government of Ghana's roll out programme 'YouStart' to address unemployment, Professor Stephen Adei, an astute academic entrepreneur and management consultant, reiterated that unemployed graduates from humanities-based universities must consider carpentry and other crafts. He urges unemployed graduates to embrace skills training

since university education only enhances their intellectual capacity. This collaborative story of Mohammed Amin, who, upon an unsuccessful attempt at gaining employment as a Computer Engineer, vied into carpentry when whiling away in his uncle's carpentry shop. He is now an entrepreneur and a master carpenter.

The research found that there were available and adequate wood craft educators in both the Western and Traditional African modules. Educators are also trained in the manipulation of both modern and digitised woodworking tools and equipment required to facilitate wood artisanal education and training. The trainers usually undergo skill development training, and there is a regular curriculum used for training, and the instructions proceed from simple to complex (progressive task-based). There is a good relationship between trainers and trainees. Trainees learn by watching and imitating the trainers. Additionally, it was noticed that there was a structured and regular industrial attachment/internship programme required to argument theory with practice for the tertiary woodcraft trainees and professionals as well as the apprentices. Although the wood industries required to absorb the interns are few, they offer the trainees the feel of the world of work while undergoing the hard skills training. There is soft skills training in Precision Quality for the wood artisans, professionals and trainees at the tertiary and apprenticeship level. The research also found that woodcraft trainers have some training in software design and application for woodcraft production, although their manipulation of modern woodcraft equipment and tools is on the low side as indicated in table 1.

The availability of skilled wood professionals and artisans to specific interior wood fixtures and furnishing has become a major concern of woodcraft patrons in the Metropolis. The metropolis' awareness and acceptance of good woodcraft design and production and its correlated need for human resources to provide the finished woodcraft have called for greater professionalism in designing and production of woodcraft for interior and exterior space. This has led to the importation of such artisans from neighbouring countries. Construction of buildings has sometimes stopped short of having suitable furnishing and other elements needed to improve and complete interior space. According to Business Day (2017), foreigners in Ghana are more skilled in the design and production of woodcraft than Ghanaians, especially in interior flooring and ceiling design and building construction. In a major construction site, unskilled Ghanaians form the bulk of the staff. The research had proven that Industrial Attachment (Internship) was mandatory for all levels of technical university programmes and other technology-based programmes of some of the traditional universities. This enables students to have a feel of the world of work. It also makes students familiar with the culture of work and work environment. Likewise, technical university students have the opportunity to be employed while at school and on internships. There is a good relationship between trainers and trainees. Trainees learn by watching and imitating the trainers. The trainers usually undergo skill development training, and there is a regular curriculum used for training, and the instructions proceed from simple to complex (progressive task-based)

The prevailing production technology, equipment, tools, and materials used for the training of wood artisans.

It was depicted on table 3 that the emerging trends in woodcraft project execution required software programmes and applications in design and production. Wood artisanal and Professional competencies in this area are lacking. It was also noticed that most woodcraft

production institutions, companies and centres lacked the state-of-the-art equipment and tools required to turn out the needed quality wood products. Oteng-Amoako *et al.,* 2008 inferred that wood processing companies in the Metropolis are not properly equipped for further processing and that wood products in the informal sector are invariable of poor quality. According to Adupong (2011), the most obvious weaknesses of Ghanaian furniture manufacturers lie in the area of product design and quality finishing. Hence, the poor finishing quality of wood products in the Metropolis**.**

The research had shown that, at the tertiary level, trainees received some technological know-how in concept development, content delivery and analysis, and competencies in modern woodcraft production. These knowledge and skills were crucial to trainers and trainees since the right technological know-how and skill were going to influence professional's and artisans' performances in the woodcraft industry. The research showed that most of the wood industries that processed and supplied seasoned and treated wood boards and planks to the wood training institutes and craft centres had either closed down, stopped production or relocated to other districts and regions in Ghana. Some have also diversified into other ventures, such as the hospitality and import trade, while others have given up their space or rented portions of their spaces for warehousing activities. These and other decisions have affected the supplies and stocking of quality wood members needed to undertake effective training and production of standard and adequate woodcraft for the Metropolis hence, the over-reliance on an alternative wood source from bush-cut operators. The reliance on less quality wood members from the bush-cut operators for the wood craft production comes with many challenges, including unseasoned and untreated wood members that reduce the live span of the fashioned wood crafts. Also, the activities of illegal mineral mining (Galamesey) in forest reserves and the insistent depletion of the timber stock in Ghana have cumulated to the woes and the prospects of the woodcraft industry.

The influx of imported cheap second-hand and new woodcraft from Western Europe and Asia has contributed negatively and positively to the miseries and progress of the woodcraft industry in the Sekondi-Takoradi Metropolis. While some of the local woodcraft professionals and artisans have adopted producing some of these elegant but slender styles that have enormous flexibility, high-quality finishing, light-weight, comfort and enhanced technology embedded in them. Others have jumped heavily onto the wagon to market and sell these used-imported cheap woodcrafts as a means of employment and income generation at the peril of the health, safety and environmental challenges associated with them. Darvas, and Palmer, (2014) see the demand and supply of skills in Ghana through training programmes and the capacity building of the locals and indigenous professionals and artisans needed to improve the employment and productivity as a crucial factor in the woodcraft industry. According to Darvas, a World Bank Study on employability skills and trades performed in the early '20s supports this assertion.

Additionally, with the introduction of alternative construction, fabrication and craft materials such as steel, aluminium, plastic, fabric, bamboo, rattan, etc., have come to compete strongly the woodcraft production and supply, which is very laborious and human-centred. Most of these later heterogeneous materials are easy to work on and finish since most of these were procured and finished and require less effort to assemble and finish hence their preference.

The job prospects and market opportunities available to wood artisans/professionals in the metropolis

As a cosmopolitan, Sekondi-Takoradi, a heterogeneous metropolis, had a lot of interlopers whose taste and interest in woodcraft had grown considerably. Much of these woodcraft quests could not be fully satisfied by the local artisan. Hence the demand attracted certain artisans from far and near. According to Business Day (2017), foreigners in Ghana are more skilled in the design and production of woodcraft than Ghanaians, especially in interior flooring, ceiling design and construction. The paper estimated that of every ten such artisans at a major construction site, six would most likely be a mix of Togo and Benin nationals, with the remaining four being unskilled or semi-skilled Ghanaians. A greater proportion of profession and artisans (80.0%) indicated that there was a high demand for woodcrafts in the Metropolis. This market opportunity that the local artisans cannot meet has encouraged importing both used and new woodcrafts. As a developing metropolis with the pungent of attracting investment into hospitality, tourism, education and manufacturing, she requires various quality woodcrafts to fit into the numerous set-ups. The Metropolis, with its vibrant marine activities, can export finished woodcrafts in addition to raw and semi-processed timber. Therefore, this market opportunity can be honoured by the teaming youth with the necessary knowledge and competencies to drive the production if they have the appropriate and adequate machinery at their disposal.

Rationale

This research is to create awareness and inform stakeholders on the low competencies in design, skills acquisition, skills impartation, and the low technological know-how among wood artisans are affecting the woodcraft industry in Sekondi-Takoradi Metropolis.

Justification

The low competencies in design, crafting skills and technological know-how among woodcraft professionals and artisans are negatively impacting the woodcraft industry in Sekondi-Takoradi. The over-reliance on outdated-energy consumption equipment and tools and the lack of modern-automated and digitised equipment and tools in the Metropolis affects the training and practice of the woodcraft professionals, artisans and industry. The scarcity of wood members in the Metropolis is due to the collapse, or the relocation of the major wood processing industries in the Metropolis has led to the insufficiency of wood as raw material for woodcraft production. Bentum *et al*. (2021), equally confirmed that the dire consequence has been the collapse of major wood processing industries in Ghana. The taste for imported used and new Western and Asian woodcrafts in Sekondi-Takoradi has increased the low patronage of local woodcraft products, the collapse of the local woodcraft industries and the subsequent unemployment in the Metropolis. This is in line with (Bentum *et al.,* 2021) who asserted that to some extent that some wood processing industries are defunct, coupled with low technological competencies in wood processing, the importation of these Used-Western woodcrafts collaterally renders local producers unemployed.

Gabs

The researchers observed that literatures of other study lacked the educational resources, technology and innovation needed to create the new learning experience that are capable of addressing wood artisanal education, job prospect and employment opportunities in Metropolis and the country at large.

CONCLUSION

Based on the finding gathered on the objective which states that the wood artisanal education and training are a must need for the sustenance of the wood industry in the Sekondi-Takoradi metropolis. The researcher can conclude that the Metropolis is endowed with various levels of education, yet the wood education is limited to only the tertiary. Wood artisanal education and training in the Metropolis has seen a slack in the implementation and sustenance at the pre-tertiary levels. It has also experienced a dwindling enrollment at the tertiary level and the apprenticeship institutions. This, in effect, has affected the demand and supply of woodcraft artisans and products, the subsequent employment opportunities among the youth, and their economic empowerment.

Based on the findings on second objective, the researcher equally concluded that wood education and training have drifted towards the computerised and automated integrated process and machinery, yet the Metropolis has not fully caught up with these new digitisation trends and mass production of high-quality woodcrafts.

Additionally, the wood processing firms' collapse created a wood stock shortage. This has propelled the importation of new and Used-Western and Asian woodcraft into the Metropolis. Due to the vibrant maritime activity of the Sekondi-Takoradi, it makes it easy for these goods to be shipped into the Metropolis. (Bentum, 2022).

It was also found that with regards to job prospect, it can be concluded that there is a huge market for the woodcraft product in the Metropolis, except that the authorities and institutions have not positioned the local woodcrafts industries to control and command their market share with affordable, stylish and quality products. On the other hand, the artisans and some local wood industries adapt these styles, finishes and techniques for mass production.

Recommendation

The tertiary institution can best enhance the competencies of professionals and artisans. These departments have equipped woodworking machines, bench workshops, and a design studio. Though, the competency-based training made the learners acquire hands-on training on how to prepare and produce woodcrafts. There is a need to strengthen these workshops with current state-of-art digital equipment and tools to facilitate design and production quality. Adequate and modern facilities should be provided for training and learning.

Woodcraft education in the Metropolis is limited only to tertiary institutions. Woodcraft education must be spread along the basic and second cycles institutions too. This will help whip the interest of children and the young youth towards the trade. Also, the community technical and vocational training centres must be revived and resourced with modern and computerised process woodworking processors to augment the training of the youth in wood crafting. Additionally, the apprenticeship training centre must be properly structured and monitored. They also have to be resourced and financially supported to make the programme attractive, retentive and progressive to the youth. There must be stronger cooperation between the African traditional apprenticeship system and western inspired technical institutions to foster

collaboration between apprentices and Western academic trainees. This will inspire and foster better relationships between the Metropolis's woodcraft trainees.

Educational authorities and regulators must ensure an organised woodcraft education and training syllabus. Poor theoretical and shallow unsystematic, and outdated content must be eschewed from training regimes in the tertiary, pre-tertiary and apprenticeship programmes.

The learners will have to be assisted by trained professors and Technicians with good knowledge and skills in design, technology and productivity. The use of group work, presentations, and simulations, among others, must be employed as methods of teaching, learning and assessment. Although the training institutions and centres have competent professors, technicians and instructors, there is a need to regularly build their capacity with in-service training and refresher courses in modern trends in wood crafting and precision quality curricula to ensure quality standards from the inception of the trainees\learners.

The Industrial Attachment component of twelve (12) weeks of general internship for long vacation plus one (1) Semester-Out (fifth semester) on workplace experiential is planned and organised for tertiary students to have practical experience in the wood industry. This concept to augment academic knowledge and skills acquisition must be introduced at the pre-tertiary level, where the Technical Vocational Education and Training (TVET) is managed and supervised by the Council for Technical and Vocational Education and Training (CTVET) of Ghana.

Woodcraft trainees and learners must learn new software programmes and their practical application in woodcraft designing and craft, wood industries system management, new trends and materials and how they are used and installed, customer relations, quality control, large industrial processes and production. They also have learnt how to apply these skills to wood crafting proposed for individual and commercial projects.

The government of Ghana and the Sekondi-Takoradi Metropolitan Authority must advocate for the supply of wood as a material for use by the training institutes and apprentice centres. Wood is becoming extinct in the Metropolis. Therefore, the Metropolitan authorities need to liaise with the Forestry Commission to seed some of the seized illegal bush-cut wood boards and planks for wood education and training in the Metropolis. The Forestry Commission needs to lead the tertiary and pre-tertiary institutions and artisanal wood centres to embark on aggressive tree planting projects to replenish the lost wood stocks.

Those interested in enhancing their skills and competencies in design and production can adopt the "Do It Yourself (DIY)" concept of virtual learning, which has now come to catch up with the global community as the new knowledge domain.

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