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Optimizing Employability Skills in Automotive Engineering and Entrepreneurship Skills for Economic Recovery in Post COVID-19 Pandemic Ravaged Automobile Industry

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ABSTRACT

The study examined the employability and entrepreneurship skills in automobile technology that are required for graduates of technical education to succeed in this covid-19 pandemic era as well aids greener economic recovery. The study identified 12 employability skills and 35 entrepreneurial skill competency areas in automobile technology that can aid graduates of technical education to function and succeed in the automotive industry in this covid-19 pandemic era. The study concludes that when graduates of technical education acquire the relevant employability and entrepreneurship skills, they have higher chances of success in either employment or running their own enterprise in automobile technology industry in this covid-19 pandemic era that will consequently aid greener global economic recovery.

Keywords: Employability, Entrepreneurship skills, Automotive Engineering, Automobile Industry, COVID-19 Pandemic

Introduction

The automotive industry is a major industrial and economic force in several economies. According to the International Labour Organization (ILO, 2020) automobile is one of the most successful manufactured products in recent time. It is perceived as a fast, comfortable, flexible and affordable mode of transport and has become a status symbol or means to reflect identity. Automobiles are and will continue to be critical for the functioning of various industries, sectors, societies and economies worldwide (ILO, 2020).

The automotive industry makes a significant contribution to the global economy and to growth and development worldwide. Its annual turnover is equivalent to the size of the sixth largest economy in the world. According to Masoumi et al (2019) the trade in motor vehicles reached US$1.5 trillion in 2018, though, less than the trade in chemicals and other machinery, but more than trade in communication products and in oil, gas and coal etc. The industry is capital-intensive, drives innovation and generates billions of dollars in investment and millions of jobs and livelihoods (United Nations Conference on Trade and Development, UNCTAD, 2018, 2019).

The automotive industry is of strategic importance for the national economic growth of many nations of the world. In developed economies, the GDP share of the automotive industry is relatively high, varying from 10 percent in the Republic of Korea to 14 percent in Germany. The automotive industry in South Africa accounted for 7 percent of the country's GDP in 2017 (ILO, 2020). The automotive industry represents a significant share of international trade. According to the in 2017 motor vehicles and automotive parts accounted for 9 percent of world merchandise exports and 12 percent of world exports of manufactured goods (World Trade Organization, WTO, 2018). In fact, throughout history, the automotive industry has proved remarkably resilient. It has recovered from the most recent global financial and economic crisis and continues to make a significant contribution to GDP, global trade and employment.

Though, there is no way to tell exactly what the economic damage from the global COVID-19 pandemic will be, but there was widespread agreement among economists that it will have severe negative impacts on the global economy. According to Szmigiera (2022) the setbacks the world suffered due to the outbreak of the corona virus (COVID-19) pandemic has a significant impact on the global economy. Such that in year 2020, the global Gross Domestic Product (GDP) decreased by 3.4 percent which was against an earlier forecast that the year was to witness 2.9 percent GDP growth (Onyekwena and Ekeruche, 2020; & Duffin, 2020). Similarly, prior to covid-19 the International Monetary Fund's World Economic Outlook reported that the auto sector represented 20 percent of the GDP slowdown in 2018. The tensions in global trade and the emergence of trade restrictions due to

covid-19 caused further harm to the growth of the automobile industry. This is a broad recognition that disruptions in economic activities to a large extent become a permanent feature of the industry, which in the years to come and that the automotive industry of the future will look markedly different from the automotive industry of today (ILO, 2020).

Therefore, future of the automotive industry will to a large degree depend on the capabilities and skills of the women and men that work in the industry. Hence, as the world's governments are working towards a fast economic recovery from covid–19, greener light is quite anticipated. Which the present global economic reality suggests the search for relevant and functional skills that in addition to competency in practical dexterity will enable graduates of technical and vocational education to be able to practice the profession beyond COVID-19 pandemic.

The automotive industry has traditionally relied on technical and vocational education and training (TVET) systems to provide workers with the skills required to work in the industry. Basic education remains the foundation for future employability and further learning. It lays the foundation for lifelong learning, social mobility and social inclusiveness. Innovative initiatives between schools, universities, private-sector and public-sector training institutes, and employers' and workers' organizations should be encouraged in order to invest resources in skills development to meet the needs and aspirations of present and future employers and workers (ILO, 2020).

It is imperative and very necessary to strengthen the relevance of TVET, to adjust to changing labour market demands now and in the future, such as broadening qualification profiles and integrating both digital and core skills into the curricula to a much greater extent. This was emphasized by Gowin Obaseki (2020) that technical vocational education and training (TVET) should be prioritized in equipping our youths with new skills sets that will enable them function optimally in the emerging world order, than just relying on information communication technology (ICT) skills that are now highly sought after by everyone to enable them work from home and minimize their chances of contracting the corona virus disease (Vanguardngr.com, July, 2020). Therefore, the need for more investment in new skill sets that will enable the youth function optimally in a post-corona virus (COVID-19) global economy. Amaechi et al (2017) further emphasized that technical education institutions give efficient training in skill improvements in engineering trades, whether soft or hard skills has great contribution to the technological development and economic self-reliance of individuals, industrialized, and economic development of nations.

Automobile technology as one of the occupations in TVET offers students opportunity to acquire either of both soft and hard skills in motor vehicle mechanics work, auto body repair and spray painting, auto electrical work, auto body building and auto parts merchandising (NBTE, 2011). When graduates from these programs acquire these relevant skills, it enables them to meet up with the requirements of the industries to handle maintenance of latest vehicles, and also enables the graduates become self reliant having the capacities to establish and run an enterprise (Amaechi & Thomas, 2020). Even though the Federal Republic of Nigeria (2013) in her National Policy on Education emphasizes on the role of TVE in economic and national development and the need for collaboration between technological institutions and the industries to enhance skills development. This noble vision seems not to be yielding the desired results. As there may be factors that impede the acquisition of these skills in technical institutions in Nigeria, which could include but not limited to the fact that the curriculum is rigidly out-dated and most of the institutions lack basic tools and equipment for practical skills training (Thomas and Amaechi, 2019).

Recent studies are advocating that graduates of technical colleges need the basic employability and entrepreneurship skills in addition to technical skills to function not just as being employed in the industries or become self-employed, but also to establish and run an enterprise successfully (Amaechi and Thomas, 2021; Doyle, 2019; Petersen, 2018 and Accenture, 2017). Possessing a skill is to demonstrate the habit of acting, thinking and behaving in a specific activity in such a way that the process becomes natural to the individual, through repetition or practice (Ogundele et al as cited in Thomas & Amaechi, 2016). In other words, skill is the ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (cognitive skill) things (technical skills) and/or people (interpersonal skills) (Cranmer, 2014; Thomas & Amaechi, 2016).

Therefore, this study sought to ex-ray the employability and entrepreneurship skills that are required by graduates of technical education that will enhance their success in automobile technology industry in this covid-19 pandemic era, in a bid to achieving global economic recovery.

Employability Skills in Automobile Technology

Employability skills are the type of skills that assist the individual to carry out their job efficiently and effectively in the workplace. They are non-technical skills and could also be termed as; soft skills' or transferable skills' or generic skills', which comprises of basic skills, resource skills, thinking skills, interactive skills, information skills, personal skills system and technology skills (Olaitan and Ikeh, 2015). These skills are necessary abilities that are essential for securing, maintaining, and performing efficiently on the job. They are the abilities or skills, approaches and activities that allow employees to relate with their colleagues and managers and be able to come up with critical decisions. This can be compared with persons who have great attributes for instance a high sense of self-novelty, productivity, skilful, and competitiveness, a high sense of willpower, and creativity in tackling problems of the country as well as globalization in the present -day 21st century (Olaitan and Ikeh, 2015). Unlike technical skills, employability skills are generic in nature rather than for specific jobs and therefore cuts across different types of industries, job levels and business sizes, from the new level employees to the most senior positions (Robinson and Garton, 2008). Researchers have also maintained

that the graduates from our institutions should be able to demonstrate the ability to be proficient in the essential communication skills, analytical skills and problem-solving, organization and time management, decision-making and risk taking; often referred to as necessary skills, key skills, life skills, key competencies, essential skills, core skills, and transferable skills that enable the be employable in the automobile technology industry (Olaitan and Ikeh, 2015).

The foregoing therefore suggests the need for graduates of technical education to be equipped with generic employability skills and specific technical skills in this 21st century to enable them function and succeed in the automobile technology industry. These employability skills include:

1. **Critical Thinking.** This is the graduate critical thinking ability sufficient for diagnosis of automotive failures. The ability to identify cause-effect relationships of automotive malfunctions; evaluate vehicle or instrument responses; synthesize data and draw sound conclusions.
2. **Interpersonal skills.** This is the interpersonal abilities sufficient to interact with customers, supervisors, and fellow employees from a variety of social, emotional, cultural and intellectual backgrounds. The graduate should establish rapport with customers and colleagues. Should use therapeutic communication (attending, clarifying and coaching, facilitating, teaching) and function (consult, negotiate, share) as a part of a team.
3. **Communication Ability.** The communication abilities sufficient for effective interaction with others in spoken and written language. Ability to explain repair procedures, document and interpret instructions. Listen attentively and exhibit effective customer service communication skills.
4. **Physical Endurance.** This is the ability to remain continuously on task for several hours while standing, sitting, moving, lifting, bending and/or working in awkward positions. Should be able to manually operate tools and equipment or perform diagnostic test while standing/walking for extensive periods of time.
5. **Mobility.** This is the physical abilities sufficient to maneuver in small spaces; full range of motion; manual and finger dexterity; and hand-eye coordination. Should move around vehicles, work in awkward spaces and positions, and manipulate fasteners and tools.
6. **Motor Skills.** That is gross and fine motor abilities sufficient to provide repair techniques and operate equipment. Including vehicle operation with manual transmission. Calibrate and use equipment and tools; remove and install automobile parts which range from small and delicate to large, heavy and awkward with necessary strength and dexterity.
7. **Hearing Ability.** The auditory ability sufficient to monitor and assess vehicle noises. Hear vehicle noise which signal malfunctions or locations of defects.
8. **Visual Ability.** This could be normal or corrected visual ability sufficient for vehicle observation and assessment, ability to discriminate between subtle changes in density (black to gray) of a color in low light. Observe vehicle responses, wire color, liquid color. Read service manuals/bulletins, gauges, charts, scales, screen, printouts, and labels.
9. **Tactile Ability.** This is the ability sufficient for mechanical assessment. Should perform diagnosis by use of touch (feel) and sensory vibrations.
10. **Olfactory Ability.** Olfactory senses (smell) sufficient for assessment of abnormal conditions of automobile operation. Distinguish smells which are contributory to assessing automotive system failures such as burnt oil, fuel leakage, and unusual exhaust odor.
11. **Professional Attitude and Demeanor.** Ability to present professional appearance and implement measures to maintain own physical and mental health, and emotional stability. Work under stressful conditions created by time limits, unreasonable customer expectations. React calmly to customer complaints which may be presented by hostile actions. Demonstrate empathy and concern for customers' position and needs.
12. **Alertness, Ability to Focus.** This is the ability to focus and concentrate on diagnostic, repair, and maintenance tasks requiring electrical and mechanical skills. Operate hand, power tools, and standard industry equipment. Use and interpret diagnostic software (scan tools), computer-based software, and electronic diagnostic test equipment.

It is therefore believed that when graduates of technical education acquire the above employability skills, it will enhance their success in automobile technology industry in this covid-19 pandemic era and consequently aid greener global economic recovery.

1. Entrepreneurship Development in Automotive Technology

Entrepreneurial skills can be applied to many different job roles and industries, developing your entrepreneurial skills can mean developing several types of skill sets. According to Thomas and Amaechi (2019) entrepreneurship skills development allows the beneficiaries to explore the various occupational possibilities the work required, available rewards, necessary training and relative advantages and disadvantages of each. It is a planned effort undertaken by an individual or individuals, institutions or agencies to develop the required skill competencies in people that will enable them contribute to the economy of the nation. Maigida et al (2013) entrepreneurial traits (skills) are characteristics that give individuals the potential or propensity to run a successful business. The traits includes creativity, need to achieve, need for autonomy, intuition among others are the ingredients of good leadership and requirements for effectiveness in any vocational area. It has also been emphasized that mastering of technical skill, marketing ability, knowledge of business creation, knowledge of business plan, knowledge of action planning, knowledge of record keeping, knowledge of quality control and Knowledge of new techniques of production as entail skill to run an enterprise (Marjor-Ritta, as cited in Thomas and Amaechi, 2019).

A. Managerial competencies

1. Maintain proper channel of communication

2. Have a cordial communications with customers and staff
3. Make effective use of feedback from customers
4. Have a long and short term vision for managing an enterprise
5. Maintain proper purchasing policy for the right tools and spare parts
6. Effectively direct the affairs of the enterprise
7. Set achievable goals and target for the enterprise
8. Plan effectively on how to attain the goals of the enterprise
9. Organize human resources for managing an enterprise
10. Understand the concept of time management and job demands
11. Carry out self-evaluation of skills, knowledge and abilities needed to manage an enterprise
12. Have a good human relations
13. Maintain a good labour relations
14. Maintain cost effectiveness policy
15. Discipline staff appropriately

B. Marketing competencies

16. Satisfy customer needs
17. Identify various marketing techniques
18. Recognize opportunities for business
19. Understand the importance of advertising in business
20. Forecast future trends in the automotive market
21. Recognize the concept of customer kingship (customer is always right)
22. Provide adequate services as well as storage facilities
23. Identify existing and future competitors
24. Provide alternative products which can compete favourably with branded products
25. Understand policies like licensing, insurance and leasing

C. Financial and accounting competencies

26. Exhibit knowledge of income and expenditure
27. Exhibit of cost accounting
28. Maintain good credit policy
29. Calculate gross and net profits
30. Explore and utilize available banking facilities e.g. ATMs, POS, mobile banking, e-banking etc
31. Determine cost of capital
32. Determine how profit to be retained in the business
33. Make insightful financial decisions
34. Understand causes of business failure
35. Compute trade and cash discount

Entrepreneurship involves the acquisition of skills, ideas and managerial abilities necessary for personal self-reliance. Graduates who may not have paid employment opportunities can effectively utilize the entrepreneurship skill acquired to establish and run a small and medium enterprise that can compete with their mates who are in high-paying employment.

Therefore the researchers believed that when graduates of technical education acquire the above listed entrepreneurship skills, it will enhance their success in running an enterprise in automobile technology industry in this covid-19 pandemic era that will consequently aid greener global economic recovery.

Conclusion

When graduates of technical education acquire the relevant employability, technical and entrepreneurship skills, they have higher chances of success in either employment or running their own enterprise in automobile technology industry in this covid-19 pandemic era that will consequently aid greener global economic recovery.

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