

TVET and Local Technologies for Sustainable Entrepreneurial in Innovation and Industrial Skills Development in Nigeria South Eastern States

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Abstract: *Technology, vocational Education and Training (TVET) are skill-based programmes. It is required that a recipient of the programme should acquire marketable skills, and be able to fix the right habits of doing things. TVET has emerged as one of the most effective human resource development strategies that south Eastern Nigeria need to acquire proper trained and modernize technological workforce for rapid industrialization and National development. This paper discusses the current TVET and local Technologies for sustainable entrepreneurial in innovation and industrial skills development. The paper argues that in order for local technologies for sustainable entrepreneurial in innovation to effectively support industrialization, wealth creation and poverty eradication, skills training must be high quality and competency-based entrepreneurial use of innovation relevant to the needs of industries. TVET efficient and adaptable to the changing technological work environment for industrial skills developments. The paper suggests that these goals are best achieved within a national TVET policy framework that is linked to other national policies on education and training at all levels of industrialization and employment still remain the strong policy option for developing Nigerian's manufacturing and industrial sectors. With increase in competitive and natural advantage by entrepreneurs among others. Nigeria will stand a better change of increasing will pace of economic development. Following the findings from the paper conclusion and recommendation were made.*

Keywords: *TVET, Local Technologies, entrepreneurial, innovation, industrial, skills, Development.*

1. INTRODUCTION

Since ancient times man has designed various ways of surviving in his environment gathering food and hunting for games. As years go by, he modifies his survival techniques from being a wonderer and shifting cultivator to a sedentary/intensive farming arts and crafts. His pragmatic disposition has resulted in innovative and better ways of harnessing the opportunities and potentials of his environments for welfare maximization and economic development.

The significance of technology and vocational Education to personal and national acknowledged even in the traditional society. In fact, before the advents of colonial administration, various vocations in Technology and Vocational Education were already in place.

The first time was in 2001; for a National conference, where we discussed the issues of Technology Education and poverty alleviation in Nigeria. That Goals, (Mans) in Nigeria. Our second calling was for a National workshop on Capacity Building in Instructional Delivery in Technical and vocational Education and Training (TVET) at Secondary Education level in Nigeria.

As a body, we are concerned, about the quality of performance and interests of our students, including the will children Technical and Vocational Education programmes, which is currently how, and resolved that one of the best ways out is to continuously develop the professional competency of the technical teachers in general, and, our members in particular. This resolution is premised on the fact that, the teacher is the prime mover of the instructional delivery system in the technical and vocational education and training. The outcome was great. The Book of Reading that was derived from an earlier workshop in the South East Geopolitical Zone shall be launched presently, at this conference. Effort shall be put in motion to publish the proceedings of the south East workshop as well, to give us a vibrant compendium of strategies for instructional delivery in technical and vocational education at secondary education level.

They were passed from one generation to another largely through the family through the family members and apprenticeship methods.

However, formal development of technology Education started during the colonial period even though on a very low scale. This aspect of education, which emphasized skills period even through on a very low scale. This aspect of education, which emphasized skill and practical competence, was disregarded by colonialist. They viewed Africa, foremost, as raw material outposts of the British Empire, and therefore, Technical Education was not encouraged. Nweke (2002) notes that the chief function of colonial Government Tertiary schools, among primitive communities they were to train the most promising boys as teachers, clerks and interpreters for the local native courts.

The National policy on Education (NPE), identified one of the aims of TVET to be that of giving training and imparting necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be self-reliant.

In its pursuit of skills acquisition through Technology and vocational Education, Nigeria has established many Technological institutions of Higher learning. It established Technical Education (NBTE) in 1977 to co-ordinate, monitor and accredit institutions that provide TVET to ensure quality of skills training. However, such laudable efforts were most restricted to Government efforts without adequate input and insignificant private sectors participation. This prompted the Federal Government to encourage, private participation in TVET in order to expand access to TVET.

A major Technology Transfer office in the country known as the National office for Technology Acquisition and promotion (NOTAP) has also been established in Abuja. This office which is an Agency under the Federal Ministry of Science and Technology was established by Decree No. 82 of 1992 (Hord, B.C, 2002). To improve and promote creatively, inventions and innovations which are critical factor for national development, economic growth and global competitiveness, the national Board for Technology Incubation (NBTI), under federal, ministry of science and Technology, was also created. The NBTI, through its technology incubation centres spread across the states of Federation has the mandate of assisting in the commercialization of Research Findings and innovations for National Development.

Furthermore, the growing awareness of the, importance of micro, small and medium Enterprises (MSMES), to both national and global economies, has led to development of MSMES parts of economic development strategies. A presidential standing committee on inventions and innovation (PSUI) has been instituted as well (Abdukadir 2010). The committee is charged with the responsibilities of encouraging innovation in technology; receiving, assessing and validating all claims to inventions and innovation; and asking all other necessary actions to ensure full commercialization of all promising feasible innovations.

2. LOCAL TECHNOLOGIES

Local technologies are a documented policy indicating desire of a government to actively engage indigenous or local companies in economic activities hitherto reserved for foreign investors especially the oil and gas industry. Local technologies mean the development of local skills, technology transfer, use of local manpower and local manufacturing.

The local technology policy provides a huge opportunity for job creation and builds the indigenous capacity or technological expertise of local companies and entrepreneurs. This indirectly becomes a stimulant growth of other sectors of the economy which eventually contributes to the nation's gross Domestic product (GDP) or output. A local technologies policy in Nigeria's sensitive industries serves as a tool for the advancement of local development. It is not only in the industries but in the economy as a whole. There are a number of entrepreneurs who have proven their worth and demonstrated that given the opportunity, they earn perform satisfactorily. The Nigerian technologies act initiative should not only be directed towards the oil and gas industry alone but to other areas of the economy such as the power sector, mining sector, agricultural lives. A country to become a major exporter builds indigenous capacity to take advantage of opportunities within all sectors of the economy.

3. ENTREPRENEURSHIP DEVELOPMENT

The present paper indicates that the establishment of innovation in technology for micro small, medium, and large scale businesses are associated with job creation and thus innovation that enhance

productivity in the economy. To stimulate rapid economic development especially in south Eastern Nigerian states. It is important to focus on preparing the entrepreneurs who would start an innovation in businesses or expand the existing ones Igbo (2005) sees entrepreneurship as the Creation and running of one's own business Timmons in 1987 also cited in Igbo (2005), sees it as the creation, building and distribution of something of value from practically nothing to individuals groups. Unido (1999), defined entrepreneurship as the process of using initiative to transform diversity existing venture or enterprise to high growing venture potentials.

Entrepreneurial development is a catalyst for economic, social and industrial development. Egai (2008) affirms that entrepreneurial development is disposition to accept innovative idea, methods and making people more interested in present and future than the past. The entrepreneurial class provides leadership in resource change, innovation, technological progress and capital formation to produce new knowledge, new production techniques possibilities, profits and economic growth. Entrepreneurship provides opportunities to hard-to-find key employees of an organization to unfold their potentials, performance and hard work to earn a reward or share in the profit or revenue generated by his ingenuity for the enterprise. The actor at the centre of entrepreneurship is the entrepreneur who possesses the following characteristics and traits.

4. PERSONAL ATTRIBUTES AND TRAIT

An entrepreneur should be hard working self-disciplined, confident, determined, innovative, visionary, risk-taking, consistent, independent, lead, amenable to change or flexible and God fearing. All these traits prepare him against the odds to success creative in technology skills:

The entrepreneur requires unique skills as prowess in communication, writing, engineering, technology. Environmental management, a monitoring interpersonal relation, building, networking coaching, organizing, art making, and technical drawing.

5. BUSINESS MANAGEMENT SKILLS

These are specific skills for decision making such as accounting finance managerial, marketing/logistics skills. The entrepreneur should be able to keep proper accounting records, financial investment details, promote sales, communicate effectively to give clear instructions and direction, build a good feasibility studies. He should be able to exploit the strength, weaknesses; opportunities and threats (SWOT) in his environment for survival of competition.

6. INNOVATION

Innovation has to do with changes leading to improvement in dynamics and create new things out of existing ones. Through innovation, the entrepreneur introduces new production techniques, new commodities to improve on existing one open up new markets, explore new source of raw materials and design new techniques management research and development programs are Formal Avenue of introducing or inculcating innovation skills in the entrepreneur. These skills are what the entrepreneur translates into business establishment and development the process of entrepreneurship starts from the generation of business idea, though implantation to the realization of output and profit.

7. BUSINESS IDEAS

Business ideas and opportunities come from a variety of ways according to Peter (2002), these include:

- **Consumers:** Opinions, information and complaints of consumers could be useful sources of information as to what the consumers want. The entrepreneur could obtain this from market survey of preferences, discussion, socio-cultural, background, biological and wealth status of the consumers etc. The entrepreneur could map out critical areas of consumers' need deficiency and inefficiency and exploit them.
- **Research and Development:** Entrepreneur as agent of change should constantly explore and gets involved in research to develop new products; improving on existing ones or establish new ways of production.
- **Existing Business:** Entrepreneur and entrepreneurs can get business By constantly monitoring and evaluating market performance of products and services of existing business.

- **Distributive Channels:** Distributive trade both at local and international levels provide opportunities for ancillary industries to spring up.
- **Government Activities:** Government activities such as registration of business patent right and government agencies provide opportunity for business. Also government programmes of economic, social and community development provides. Opportunities for business entrepreneur.
- **Adverts:** advertisement in news prints radio and TV bill boards are a source of news line business to the entrepreneur.
- **Sundry Activities:** The entrepreneur can lean about things needed by the consumers but which are not supplied from activities such as marketing , seminars/symposia, marriage burial ceremonies, public centers traveling, sporting activities and catalogues.

8. DEVELOPING A BUSINESS IDEA

The translation of business idea into a business ventures takes the following process when a business idea struck an entrepreneurs, the first thing is to write it down to avoid forgetting. The various ideas that have been so recorded are the screened and the feasible or plausible and more profit-oriented ones selected from implementation. A good feasibility or business plan must by systematic and integrates market, finance, production and human resources. It should have:

- Clear mission state of the business line to be involved.
- A design of production, process, detail logistic and operational activity plan of a complete business circle.
- A detail marketing and sales plan. Forecasting sales and identifying consumers' problems with existing products.
- An organizational plan of administrative relations, legal relations, dirty schedule, customer service etc.
- A detail financial record plan projected for 3-year period explaining income, expenses and profit.
- Evaluation of business operation and objectives.
- Provision of minimizing risk and uncertainty e.g starting a business that the entrepreneur is familiar with or that has been tested in that environment of operation.

9. INDUSTRIAL SKILLS DEVELOPMENTS

Industrial-ship spirit persuades all economics are considered the bedrock of modern economic development through educational innovation, technological breakthrough and by developing untried technologies. The industrial activities can bring about increase in production, create employment income, facilitate rapid growth of micro, small, medium and large scale enterprise to reduce poverty and hunger among the people. Given this background it is thus imperative to explore the extent to which industrial-ship contributes to industries in Nigeria. This is course is the focus of this paper. Innovation technology progress and capital formation to produce new knowledge, new production techniques possibilities, new and economic growth.

Industries require creative technological skills as process in communicating, writing, engineering, technology, environmental management, monitoring, interpersonal relation, building, networking, coaching; organizing art making and engineering drawing. Thurck (2001) the role of the industrial comparative advantages shifted towards knowledge based economic activities, large, firms lost, their competitive edge while smaller and more flexible entrepreneurship venturing on innovative, and management. Skills, was established. This is to make the graduates self-employed creating job opportunities for others and generates wealth.

Entrepreneurship activities and innovative in South-East of Nigerian Universities. Nigeria have covered and developed enterprise in the following areas.

- Agriculture/agro-allied activities: food stuff, restaurant, fast food vending etc:
- Solid mineral: Quarrying, germ stone cutting/polishing and crushing engineering.
- Power and transport: Power generation, Haulage business (cargo and passengers).

- Information and telecom business: manufacturing and repairs of GSM accessories.
- Hospitality and tourism business: Hotels, accommodation resort centres, film and home video production.
- Oil and gas business. Construction and maintenance of pipelines, drilling, refining products.
- Environmental and waste management business: Refuse collection/disposal, recycling, and drainage/sewage construction job.
- Financial and banking services: banking, insurance and stock trading.
- Engineering and fabrication work: machines and tools fabrication.
- Building and construction: plan and design services, material sourcing.

Since 2000 due to the exponential growth in global information technology, a lot of service enterprises have emerged viz GSM accessory manufacturing. GSM recharge cards/credit sale. Cyber cafe, internet business. Communication and computer systems. Information technology and globalization has increased the growth of film industry in Nigeria (Nollywood). Home video and comedian tapes are being produced entrepreneurs in their various forms. The increasing entrepreneurship activities since 2011. Is partly caused by the increasing rate of unemployment growing service sector reduction UN regulatory control increasing privatization competition and the introduction of poverty eradication programme in 2001. All these have created potency in international trade and finance to create global competitiveness. The world economic forum report of 2006 ranked Nigeria as 88% out of 7 countries in its global competitiveness indicator in the meantime entrepreneurship venturing and innovations are focused at sectors and areas of comparative advantage in which the entrepreneur has natural competition such as service to a new customer. Production of product/services for low income earners. Personal service business etc. the modus operandi becomes the use of micro business following businesses to produce for both the domestic and international market.

- Computer and cybercafé.
- Vegetable production
- Animal fat and oil.
- Beverages
- Plastics and Rubber.
- Art and decoration
- Wood and furniture
- Transport haulage
- Fruit lice. Spirits making and dairy production
- Foundry/fabrication
- Textiles and embroidering
- Machine, vehicle spare parts fabrication savings, collection and micro finance business.
- Machine reliable spare parts fabrication
- Saving collection and micro finance business
- Farming and livestock cassava flour and poultry
- Ceramics aluminum design.
- Bakery and cakes.
- Restaurant and food vending
- Plantain, potatoes chips/flakes

- Hair dressing/barbing salon
- Leather fur and skin
- Soft drinks and sachet
- Electrical/electronic service
- GSM, recharge card/service
- Music; dance drama and film production.

10. CONCLUSION

Technology, Vocational Education and Training (TVET) and local Technologies for sustainable entrepreneurial innovation, and industrial skills development in South Eastern States, is at the peak of awareness creation and participation by both the society and Government. Government has shifted to addressing the problems of infrastructural decay and finance. The problem of power supply is still very much on ground while credit framework via microfinance banks put in place to assist entrepreneurs with soft loans- is still in infancy.

Innovation and industrial skills characterized entrepreneurship and brings about technical progress through capital savings, efficient production techniques and higher level of output or economic growth. The entrepreneur creates and supplies new line of consumption to enhance growth in some emphasized entrepreneurial sectors to stimulate growth in various enterprises and industrial organizations. Technological industrial innovation in education programme provides the opportunities enabling individuals to develop and improve on their skill which permit them to participate fully in the scheme of affairs in the entrepreneurial skills necessary for entrepreneurial expressions.

However, Nigerian entrepreneurs still face doldrum of problems and challenges in their struggle for innovation and technical progress.

11. RECOMMENDATION

From the foregoing discussion it would be pertinent for us to recommend the following:

- Government should increase her support for entrepreneurial training take-off tools and funds to make available to more of the trained graduates of entrepreneurship programmes such as NOAS.
- Entrepreneurs should seek the assistance/incorporate the services of other persons in skills that they lack but highly needed for their business to succeed or grow.
- Entrepreneurial discoveries and innovations should be linked up with SMEDAN/industries for practical production. The present wide gap between R and D in tertiary education and industries should be narrowed.
- Entrepreneurs should explore areas in agriculture and others where increasing returns/comparative advantage is high and not saturated areas of production.
- Assistance to entrepreneurs in production quality by institutions like the standard organization of Nigeria (SON) and the raw material development council of Nigeria should be encouraged.
- Promotion of micro-small and medium scale enterprises should be intensified and entrepreneurship development activities incorporated in Nigeria's industrial blue prints by government.
- Government should guarantee and remove the bottlenecks in accessing loans by entrepreneurs from micro-finance banks and grant them reasonable time to run the business before loan repayment could start.
- Easy business registration tax holiday. Basic infrastructures should be provided by the government to encourage the growth/expansion of enterprises and industrial organizations in Nigeria.

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