

ASSESSMENT OF ENTREPRENEURSHIP SKILL OF STUDENTS INVOLVED IN INTEGRATED INFORMAL APPRENTICESHIP ASSESSMENT PROJECT: IMPLICATION FOR CURRICULUM INNOVATION

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Abstract

Youth unemployment has become a major challenge for governments of developing nations like Nigeria. The government of Nigeria took a curriculum dimension to solve the problem by including trade and entrepreneurship subjects in the curriculum innovated by the Nigerian Educational Research and Development Council for secondary schools. The intention is to foster entrepreneurship knowledge for wealth and job creation in students as a preparation for self-employment after secondary education. The extent to which this inclusion has yielded anticipated results is still debatable and calls for an assessment of the programme's effectiveness and for more investigations and a way forward. In this light, this study assesses the entrepreneurship skills of secondary school students involved in integrated informal apprenticeship compared to their counterparts who learn entrepreneurship in school. One hundred twenty-one senior secondary school students were randomly sampled from three secondary schools in Delta State in the 2019/2020 academic

session. The sample was divided into two groups based on the subject's responses to a 20-item questionnaire "Student" Engagement in After School informal Trade Survey (SEASITS) with a reliability coefficient of .75. While forty-three were found to be engaged in informal apprenticeship in different trades (G1), the remaining 78 do not combine schooling with trade/entrepreneurship (G2). A twenty-item Test of Entrepreneurship Skills, Innovation, Self-Efficacy and Problem-Solving (TESISPS) with a reliability coefficient of .82 was administered to both groups. The independent t-test statistics revealed a significant difference in both groups in all four variables, with the integrated apprenticeship group possessing superior means. The study concluded that infusing informal apprenticeship into the secondary school programme in students' trade of choice will enhance students' acquisition of important skills and attitudes toward entrepreneurship early in life and stem the tide of unemployment in Nigeria.

Keywords: Informal apprenticeship, Secondary education, Integration.

Introduction

A major socio-economic challenge facing nations today is the inability to employ trained and eligible workers in the workforce during their vibrant years. In Nigeria, unemployment increased from 27.1% in the second quarter of 2020 to 33.3% in the fourth quarter of the same year (figure for some states such as Imo stood at 56.6%, Adamawa, 54.9 and Cross River, 53.7% respectively) with 22.8% of people underemployed. The unemployment rate for young people between the ages of 15 – 34 years stood at 42.5% in the 4th quarter of 2020, with underemployment for the same age group at 21.0% (Nigerian Bureau of Statistics, 2021). According to the Bureau's report, 16.9 million youths were unemployed in the 4th quarter of 2020. Thus, out of the 46.5 million people eligible to work, 15.9 million were underemployed, while 40.8% of youths between 15 and 24 years of age were unemployed.

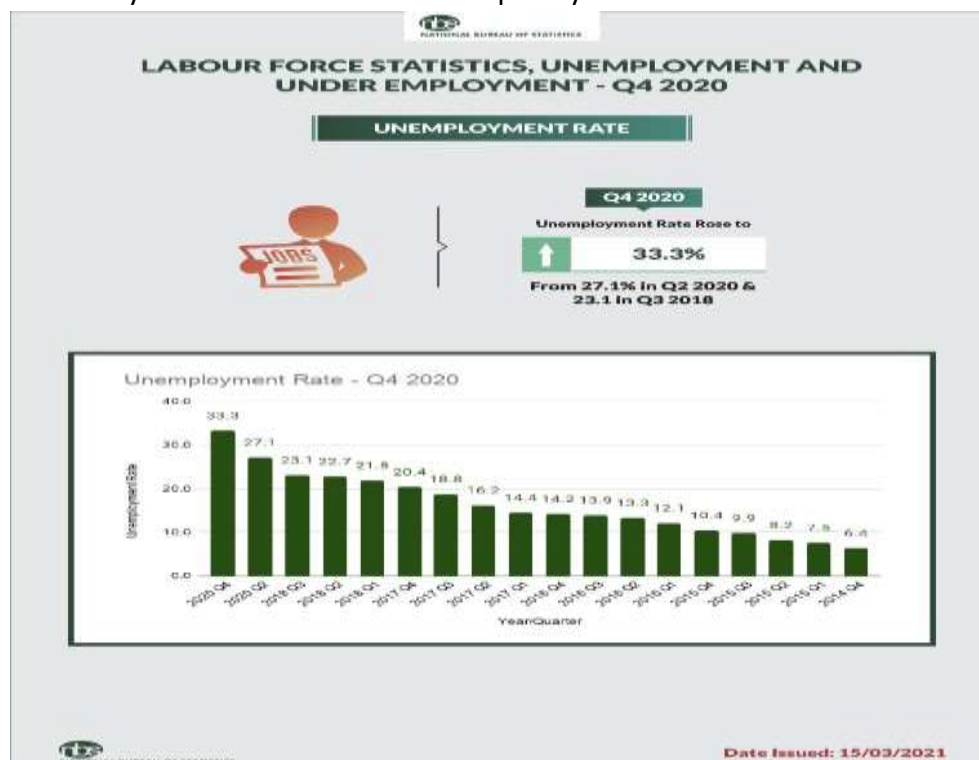


Fig. 1. Unemployment statistics in Nigeria in the 4th quarter of 2020 by National Bureau of Statistics released 16/3/2020 and published online by BellaNiger.com

This challenge has continued to magnify by the day as new graduates leave school and the National Youth Service Corps discharges Corp members every year (Falusi, 2014; Udoh, Joseph & Amajouoyi, 2014; Anyikwa, 2018). This situation has called for a critical look into the factors responsible for this condition. Education and schooling have been variously described as tools for improving human knowledge and problem-solving capabilities. It bestows the individual with the abilities and skills to use the natural and learned endowment to live better lives in society. However, recent events have questioned the truth about this. Adolescents and youths who have acquired education continuously swell the unemployment data by the year, unable to utilise the knowledge to lead better lives and be lifted above the poverty level. Many end up in jobs for which their schooling is a mismatch. The salaries and wages they earn from those jobs are not commensurate with their level of schooling and certification, which often result in productivity and labour health problems. Literature (Cohn & Ng, 1999; Etuk, Akpan & Etuk, 2012; Akpan, Usoro & Udofia, 2013) highlighted the consequences of Job- schooling mismatch on the economy, labour market behaviours of the labour force and the individual.

The unemployment situation in Nigeria is traceable to two major events in the country's history. The first is the civil war. The period after the civil war came with the realization that education was a needed tool for rebuilding the nation. This was accompanied by a massive increase in the number of schools, high graduate turnout and attachment of importance to the acquisition of certificates. Before this time, the few schooled individuals got employed in jobs with juicy pay. Job mobility was high for people with higher credentials, and the more certificates one acquired, the higher the possibility of mobility. Cases of over-schooling were nonexistent or very few. However, with the continuous production of school leavers of all levels without a commensurate increase in the number of industries, the

privatization of the few existing ones and the advent of global economic meltdown, it became difficult or impossible to absorb the school leavers into government civil service. This is grievous since the school leavers are not equipped with the skills they need to become independent job creators. The result is that while schools keep churning out graduates with different levels of certification, jobs become more elusive, and the streets become increasingly littered with unemployed people who lack the necessary skills to create jobs for themselves and others. Though Nigeria is not alone in this dilemma, countries have focused on developing the entrepreneurship system to overcome the scourge.

Entrepreneurship is a system of ideas and values that, until recently, is not been treated as part of the curriculum but as a process of using private initiative to transform a business concept into a new venture or enterprise with high growth potential (Mkpa, 2014; Ugwoke & Abidde 2014; Mbanefo & Eboka, 2016). It is, therefore, the utilisation of learnt and innate skills in initiating a strategy for creating, nurturing and growing a vision, product, service or process that will lead to innovation. To be entrepreneurial is to possess the skills, attitudes, and values necessary for finding solutions to problems through creative thinking. An entrepreneur is an innovator, a lifelong learner, a creative person, an initiator and a potential industrialist (Moemeke, 2013). An entrepreneur is a problem-solver who uses creative thinking and innovativeness to solve societal issues. They thrive in filling gaps in human needs and desires and are triggered by a desire to satisfy human wants. The skills of entrepreneurship are both acquired, developed as well and innate. While the skill can be learnt through hands-on practice-focused education and training, they are often acquired through formal and informal apprenticeships.

Traditionally, apprenticeship refers to learning a trade or craft under a skilled practitioner. In the modern concept of apprenticeship, individuals are allowed to develop skills in chosen areas in an informal setting while developing academic qualifications through classroom learning. This is the integrated apprenticeship approach. Individuals in the apprenticeship programmes have the opportunity to learn job-specific skills by engaging in real work alongside engagement in school academic activities and under the supervision and direction of experienced staff. The learning method often involves imitation, demonstration, trial and error and experimentation (hands-on). According to International Labour Office (ILO, 2011), informal apprenticeship is based on an agreement between the apprentice and the master craftsperson who commits to training the apprentice in all the skills relevant to the trade over some time, usually between one and four years. Unlike formal apprenticeship, the informal one is embedded in local culture and tradition, and incentives are norm-dependent. In most cases, the master craftsman/woman is paid a fee and also gains in the availability of free labour from the apprentice. In the process, the apprentice acquires the necessary skills and an understanding of the world of work. Another variant of traditional apprenticeship is when skills are handed down along family lines to close relatives or members of a clan who provides specialised services to the community and train people desirous of the skill through informal apprenticeship. The unemployment rate among young people in countries with a dual apprenticeship system is considerably lower than in other countries (Glessler, 2019). It is a means of enforcing social order and control.

Despite certain deficiencies of informal apprenticeship such as long work hours by the apprentices, little or no wages, lack of social protection in terms of ill-health, injury and other unforeseen events, and human integrity issues such as gender imbalance, breach of contract

by the master and attendant child labour issues (ILO, 2011), many benefits accrue from informal apprenticeship. Some of which are:

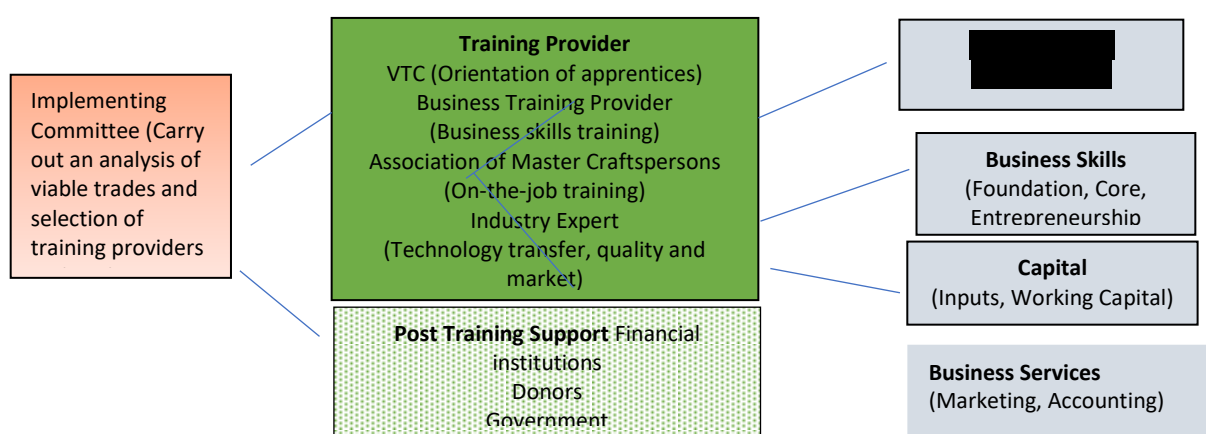
- Diversifying the local economy by engaging in local industries peculiar to communities. These local industries meet the needs of the communities and their surroundings
- Reduction of unemployment through engagement in income-yielding ventures through honest labour.
- A proven training system for providing relevant skills. The local apprenticeship system provides avenues for transferring and acquiring skills from master to apprentice. This is often through observation, imitation and practice.
- Cost-effective in improving employability compared to other forms of training.

A major shortcoming of traditional apprenticeship is a high percentage of illiteracy due to the lack of formal education among apprentices and the consequent inability to harness the available knowledge from other sources in fostering creativity, innovation and productivity. The search thus should be on how best to improve the apprenticeship model of skill acquisition to equip the youths with the necessary level of literacy and entrepreneurial skills for self-employment and consequent combating of unemployment. Some African countries such as Ghana, Zimbabwe, Kenya and Benin Republic that have adopted their models of apprenticeship have made appreciable level of progress in combating unemployment and increasing income and social stability (Association for the Development of Education in Africa policy report, year)

Theoretically, the Association for the Development of Education in Africa presents a model of informal apprenticeship in which there are key connections between the implementers, the service providers and the skill or trade areas involved in the entrepreneurship apprenticeship process (Fig.1).

Fig 1

Model of informal apprenticeship in Zimbabwe



Note *Quality improvement Apprenticeship model (QIA) in Zimbabwe. From informal apprenticeship: a viable alternative to youth employment skills. Published by Association for the development of education in Africa at <https://www.adeanet.org> 2015*

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his study thus investigates the possible integration of an informal apprenticeship programme into formal education (Integrated informal apprenticeship) to foster learners' development of vital knowledge and skills needed to establish an enterprise, become job creators and wealth creators and overcome the ugly menace of unemployment.

The search for demand-supply equilibrium in the labour market has been a global issue for decades. Evidence exists to explain the unevenness in the literature (Dabalén & Oni Adekola, 2004; Udoh et al., 2014). An interesting assertion made by Udoh et al. (2014) for this lopsidedness is that University admissions are market blind, so admissions into universities and other higher institutions are based on secondary school grades instead of labour market demands, prospective students' interests, innate and acquired skills and potentials. This is blamed on a lack of synergy between established sectors in labour and manpower production segments of the Nigerian economy, such as labour market information system management, career counselling professionals and the private sector that utilize and employ the products of education.

It is important to note that secondary school education is meant to lay the foundation for good living within society and higher education (FME, 2014). The National Policy on Education specifications in section 5 No 22 b, c, and h clearly state the government's intention for secondary education. The inclusion of about 34 trade subjects into the secondary school curriculum (upper Basic and senior secondary) in the NERDC innovated curriculum is that every student at the point of leaving secondary education must have leaned towards one skill area and developed a mindset for growing talent in that area, acquired entrepreneurial orientation as well as a mindset for creating and sustaining innovations (Manefo and Eboka, 2016). The National Economic Empowerment and Development Strategy (NEEDS) also focused on using the secondary school curriculum to create manpower to launch Nigeria into production, job creation, wealth creation and poverty reduction. Whether secondary schools are turning out these individuals to meet these national goals is still questionable because students leave school without enough skills and attitudes to create jobs. Instead, many seek university education, and others remain unemployed. It has been argued that theoretical knowledge of the needed skills alone does not trigger entrepreneurship (She, Yang & Tang, 2016) but the ability and opportunities to utilize the skills for productive ventures. It has also been argued that schools do not provide students with enough practical experiences to actualize and utilize entrepreneurial skills. However, they provide theoretical knowledge about the skills. Also, the teachers of these trade subjects do not have the necessary facilities, materials, equipment and practical knowledge to properly groom the students in different aspects of entrepreneurship and trades. Miller (2015), She, Yang and Tang (2016), and Uleanya and Gamade (2017), in their different investigations of why entrepreneurship education seems not to be yielding the required results, identified the following reasons

- Poor goal definition with content alignment
- Lack of competition as entrepreneurship education programmes is distinct.
- Poor research on the use of methodologies that reliably ascertain the effect of an intervention.
- Lack of conviction on the part of students
- Teachers' perception of the orientation of the programme
- Too many options are available to students hence the lack of conviction to do any.

- Teachers treat entrepreneurship education as knowledge-based instead of action/activity-based.

However, literature (Knowles, 2017) noted that integrated apprenticeship allows individuals to combine work and study by mixing on-the-job training with classroom learning. Apprenticeship is also a method of learning a craft or trade by hand experience under a skilled worker with or without a written agreement. According to him, the benefit of that includes learning and constantly developing transferable soft skills such as communication, teamwork, problem solving and knowledge. He identified areas where individuals can undertake an apprenticeship, including:

- Business apprenticeship in roles such as accounting, marketing, human resource management, sales, administration and recruitment.
- Construction apprenticeship in roles such as civil engineering, mechanical engineering, electrical engineering, IT engineering,
- Health apprenticeships such as nursing, National health scheme (NHS)
- Information Technology (IT) apprenticeship in security and software development
- Law apprenticeship
- Media apprenticeships include journalism, event management, costume design, tailoring etc.

It is on this note that it becomes necessary to find out if integrating informal entrepreneurial apprenticeship into the secondary school system will yield the necessary impetus for secondary school leavers to take up entrepreneurship instead of plunging themselves into the already crowded job market or engaging in unlawful, illegal and fraudulent activities detrimental to the nation's economy and her reputation as a nation. This study, therefore, asks thus: will there be a significant difference in the entrepreneurial skills, innovation skills, self-efficacy and problem-solving skills of students who engage in informal apprenticeship along with schooling (G₁) and those who only learn entrepreneurship as a school subject (G₂) The study tested the following hypotheses.

1. There is no significant difference in the entrepreneurship skill of students who engage in informal apprenticeship and schooling (G₁) and those who only learn entrepreneurship as a school subject (G₂).
2. There is no significant difference in innovation 3 skills of students who engage in informal apprenticeship while schooling (G₁) and those who only engage in formal schooling (G₂).
3. There is no significant difference in self-efficacy skills of students who engage in informal apprenticeship while schooling (G₁) and those students who do not (G₂).
4. There is no significant difference in the problem-solving skills of students who engage in informal apprenticeship while schooling (G₁) and those who do not (G₂).

The rationale for the study is to enable policymakers and curriculum planners to take decisions that may lead to innovations in the Nigerian senior secondary school curriculum. It will also help policymakers determine how best to cater to student's skill needs and direct them to necessary workplace skills before they leave school. It will also improve adolescent development of soft and hard skills required for entrepreneurial life early in their development.

Method of the Study

The study adopted a survey design. The study population consisted of senior secondary school students from three secondary schools in Delta State, Nigeria. One hundred and twenty (121) senior secondary II students were randomly sampled for the study, out of which forty-three (43) were involved in learning particular trades and skills in the informal setting outside school hours. This group constituted G1. Seventy-eight of them who are learning entrepreneurship subjects as school subjects constituted G2. The classification was based on students' responses to a questionnaire tagged "Student Engagement in After-School Informal Trade Survey (SEASITS)", administered to the sample for that purpose. SEASITS is a researcher constructed 20-item questionnaire whose reliability coefficient was found by Cronbach alpha to be .75. The questions on SEASITS focused mainly on what the student does after school and at weekends, the parents' trade and the role the child plays in assisting at weekends and during holidays and breaks.

Two weeks after the administration of the SEASITS, a 20-item 'Entrepreneurship, Innovation, Self-Efficacy and Problem-Solving (TESISPS)' scale constructed by the researcher was administered. The face and content validity of TESISPS were determined by a curriculum evaluator and an entrepreneurship educator who found the instrument valid for data collection in the study. The reliability of TESISPS was found by first administering it to 20 other students outside the sample and the reliability coefficient found by Cronbach alpha to be .82. Five items each in the questionnaire were devoted to each of the areas of the instrument lettered A to D. Section A which sought information on subjects' entrepreneurial skills focused on

- communication
- soft skill for the sale of business ideas
- focus (eye on goal achievement)
- Ability to learn always
- Business strategising

Section B sought information on innovative competencies focused on

- Independent thinking and decision making
- Target-oriented and tenacious actions
- Creative problem-solving and development of working methods
- Self-assessment and development of own skills and learning methods
- Resilience even in failure

Section C relates to self-efficiency and addressed

- Risk and uncertainty management skills
- interpersonal and networking management skills
- Opportunity recognition
- Procuring and allocation of critical resources
- Development and maintenance of an innovative environment.

Section D of the Instrument, which tested subjects' problem-solving skills, focused on the following skill areas:

- Analysing the factors or causes of a situation
- Generating a set of alternatives to achieve end goals
- Evaluating best solutions

- Implementing plan
- Assessing the effectiveness of the plan.

The subjects were asked to rate themselves on a 5-point Likert scale of 'Always', 'Sometimes', 'Not sure', 'Not always' and 'Never'. The items were assigned values of 5 to 1 in that order. Data collected were analysed using the independent t-test statistic to ascertain whether the groups differed significantly in the highlighted areas. The t-test was chosen to enable the pairwise comparison of the means across the four dependent variables in the two groups. Acceptance and rejection of null hypotheses were done at the 0.05 level of significance. **Results**Data collected were subjected to an independent sample t-test, and the result is presented in the table below.

Table 1

Mean and Standard Deviation by group

Group Statistics					
	Group	N	Mean	Std. Dev.	Std. Error
level of innovative skill	G ₁ = informal apprenticeship trade	45	4.16	.706	.105
	G ₂ = None	76	3.74	.998	.115
level of self-efficacy	G ₁ = informal apprenticeship trade	45	4.24	.773	.115
	G ₂ = None	76	3.82	.828	.095
Problem-solving ability	G ₁ = informal apprenticeship trade	45	4.56	.785	.117
	G ₂ = None	76	3.79	.998	.114
entrepreneurship skill	G ₁ = informal apprenticeship trade	45	4.18	.886	.132
	G ₂ = None	76	3.55	.855	.098

Table 2

t-test of the difference in entrepreneurship between the subject who engage in informal apprenticeship along with schooling (G₁) and those involved in schooling only (G₂)

Group		N	Mean	Std Dev.	Df	t-Value	Std. Error	Sig.2-tailed
Entrepreneurship skill	G ₁	45	4.18	.886	119	3.835	.132	.000
	G ₂	76	3.55	.885			.098	
Problem solving	G ₁	45	4.56	.785	119	4.405	.117	.000
	G ₂	76	3.79	.998			.114	
Self- efficacy	G ₁	45	4.24	.773	119	2.820	.115	.006
	G ₂	76	3.82	.828			.095	
Innovativeness	G ₁	45	4.16	.706	119	2.470	.105	.015
	G ₂	76	3.74	.998			.115	

Table 2 above showed that subjects who combined informal apprenticeship with schooling (M=4.18, SD = .886) were significantly different $t = 3.83$; $df = 119$; $t = 3.835$; $p < .05$ in the level of entrepreneurship skills exhibited by their counterparts who were not involved in informal entrepreneurship (M=3.55, SD=.855). Null hypothesis one, which states that there is no significant difference in entrepreneurship skill acquisition of the two groups, is therefore rejected. There is a significant difference between the entrepreneurship skill exhibition of students engaged in informal apprenticeship and classroom entrepreneurship studies (G₁) and those who depend solely on classroom entrepreneurship lessons (G₂). The higher means of G₁

(students who engaged in informal apprenticeship along with schooling) is evidence of a better understanding of entrepreneurship than their counterparts who are not involved in informal apprenticeship.

Also revealed in the table is a significant difference ($t = 2.47$, $df=119$, $P = .001$ in the innovative skill level of students who combine informal apprenticeship programme and classroom learning ($M= 4.16$, $SD= .706$) and those who did not ($M=3.74$, $SD= .998$). Hypothesis 2, which stated a no significant difference in innovative skill acquisition of the two groups, was therefore rejected. There is a significant difference in innovative skills possessed among the groups.

G_1 student ($M= 4.24$, $SD = .773$) differed significantly in self-efficacy from G_2 students ($M=3.82$, $SD= .828$) $t = 2.82$; $df = 119$; $P < .05$ alpha level used for consideration in this study. The hypothesis of no significant difference in self-efficacy of both groups was rejected. The trend was maintained in the groups' problem-solving skills with $t = 4.40$; $df = 119$ $P = .05$ ($M=4.56$, $SD=.785$) for the students involved in informal apprenticeship compared to those who were not ($M=3.76$, $SD= .998$). It means that subjects differed significantly in all four measures and groups. In all four measures also, subjects involved in integrated informal apprenticeship while still schooling possessed higher means compared to their counterparts who learnt entrepreneurship only as a school subject but without informal apprenticeship experience

Discussion of Result

The results of this study imply that in addition to the introduction and implementation of entrepreneurship courses in schools, students need some opportunities for physical exposure to situations where they will utilise the skills and experiences as well as acquire practical experiences in the world of work. The result of the study aligns with She, Yang and Tang (2016), Uleanya and Gamade (2017) and Miller (2015), who identified the superiority of integrating informal apprenticeship into academic programmes for better gains. The result also points to the fact that while classroom entrepreneurial lesson exposes students to knowledge and facts about trades and skills required for becoming entrepreneurs, the apprenticeship programme exposes the students to practical situations where such knowledge and skills are put to use in the world of work. This develops the student's understanding of business and innovation alongside human psychology. Also important to note is the presumption that students who have already aligned to particular skills are more likely to utilise them after secondary education and, as such, are less likely to be unemployed after the secondary level of education and even afterwards. They will be self-employed and able to generate wealth rather than submit to the psychological influence of over-schooling.

Innovation is triggered by challenges and the desire to satisfy human needs. When individuals face a challenge in the workplace, their ingenuity is challenged and triggered, and the desire to find solutions is heightened. Integrating informal apprenticeship presents students with scenarios of learning about the skill and confronting such challenges in real life. This aligns with the views of She, Yang and Tang (2016) and Uleanya and Gamade (2017), who implicated lack of challenge and competition as some reasons for the poor desire to innovate.

Recommendations

In the light of the findings of this study, the following recommendations are hereby made.

- Entrepreneurship studies through the trade subjects in the secondary school curriculum should be sustained and fortified through proper funding, adequate teacher supply, training and re-training and enforcement of implementation through regular supervision.
- There should be a synergy between the school and private sector/community artisans in the respective skill areas so that secondary school learners in the different skill areas can acquire skills in the practical work environment. This will also boost students' interests; increase awareness of the business opportunities they often overlook and create interest in using the skills and knowledge learnt in school.
- Accredited informal/private sector partners should be awarded certificates and recommendations describing the level of skills acquired by the holder to employers of labour and even during the registration of their own private business.
- Certificates and letters of recommendation from private sector informal skill trainers should be an additional requirement for admission into tertiary institutions as evidence that such students possess skills that they will fall back on after tertiary education. Thus, reducing unemployment, improving employability, skills acquisition and synergy between schooling world of work while mitigating social and financial infractions among youth.

Conclusion

The premium government places on the production of skilled individuals through education has called for understanding all factors that could help boost the manpower needs of the country and stem the current high level of unemployment among the teeming youths. The inclusion of trade subjects in the curriculum of secondary school has enriched the curriculum towards achieving that goal. However, the study has revealed that depending solely on classroom knowledge does not enhance the entrepreneurial skill and confidence of the learners for engaging in entrepreneurship but that fortifying it with informal apprenticeship will provide adequate practical and field experience for the learner and as such enhance students' zest for venturing into entrepreneurship after school. The paper, therefore, concludes that if an informal apprenticeship is integrated into the entrepreneurial training of secondary school students, the menace of schooling without tooling will be reduced, employment will be generated, wealth will be created, youths will become leaders early in life and the nation's economy will be boosted.

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