



Unemployment among Technical Students: Implication for Managers of Higher Education

Olojuolawe Sunday Rufus^{1*}, Osuntuyi Olusola Edward¹, Ibidapo Bamidele Abel¹

¹Department of Industrial Technology Education, Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti, PMB 250, Nigeria
E-mail: olojuolawe.sunday@bouesti.edu.ng

Abstract - *The problem of unemployment among youths has remained unabated. This has cast doubt on the methods of instructions by lecturers. This study takes a critical review of some of the previous studies with an emphasis on employment statistics and employability skills. The paper x-ray the basic elements of employability skills and the latest statistics of youth unemployment in Africa particularly, Nigeria. The aim is to sensitize education managers of higher institutions in Nigeria about the danger inherent in turning out graduates massively without the corresponding skills to match them adequately with the world of work. Findings show that there is a persistent rise in the rate of youth unemployment because what the schools offered is not compliant with the labour market demand. The resulting skills played a significant role in increasing unemployment among Tertiary Education graduates. Therefore, the higher education curriculum needs to be modified to reflect the skills required of employers.*

Keywords – *Unemployment, Employability Skills, technical graduate, Managers, Education.*

Submission: June 27, 2021

Correction: June 1, 2022

Accepted: June 1, 2022

Doi: <http://dx.doi.org/10.14710/ijee.4.1.1-7>

[How to cite this article: Rufus, O. S., Edward, O. O., Abel, I. B. (2022). Unemployment among Technical Students: Implication for Managers of Higher Education. *International Journal of Engineering Education*, 4(1), 1-7. doi: <http://dx.doi.org/10.14710/ijee.4.1.1-7>]

1. Introduction

Employability skills (ES) are the skills needed by the youths to make them employable and ensure their sustainability and advancement on the job [1]. [2] observes that some countries of the world have gone a step higher by setting up accreditation bodies for the development of their graduate employability skills. However, many of the developing nations like Nigeria are still struggling to reposition their technical and vocational programmes to meet the stated national objective. This objective of nation-building can only be met when technical education is enhanced (Ari, 2017). Towards this end, Emmanuel, (2015) observes the need to restructure and enlarge the curriculum of technical education to include employability skills as a measure aimed at combating joblessness in Nigeria. The main purpose is to produce competent technical graduates who will either be able to teach professionally or seek employment in companies and organizations or set up their own jobs (NPE, 2013). The dream, however, has remained elusive because the curriculum is only geared towards hard skills acquisition.

Consequently, there is growing apprehension on the part of the parents and the general public because of the danger it portends for society. The main cause for the worry

is that the majority of these youths are holding qualifications from Higher Institutions in Nigeria [6]. The 2010 workshop by the Ogun State Bureau of Tertiary Institutions revealed that the nation's job creation capacity is growing at the rate of between 5% and 7% for the past seven years. Equally, the about 213 Universities, Polytechnics and Colleges of Education in the country produces over 300,000 graduates annually; this number should ordinarily be sufficient for the country's human capital resources needs, but employers willing to pay well to attract skilled workers are increasingly, finding it difficult to fill the job vacancies [6]. Anyanwu (2014), opines that the rising negative impacts of joblessness have prompted a sudden change in Government in numerous African nations and increasing crime rate. For example, the frequent and various military coups in Nigeria had been justified based on the poor standard of living and unemployment among the youths. Thus, the progression of financial and political changes in different nations in the sub-Saharan region of Africa and some other places in the world (Asaju, 2014). For instance, in Nigeria today, the emergence of ethnic militias, largely led by the youths, such as Egbesu, Oodua peoples' Congress (OPC), Niger Delta boys, and the Independent People of Biafra (IPOB) which are used to terrorize and deprive ordinary citizens of a just and decent

living are the direct consequences of youth unemployment on the society. The situation is not only sympathetic but embarrassing that the vast human material resources available to the country had not been trained and utilized to the advantage of the country [7]. The problem had largely been adduced to the absence of relevant infrastructure and outdated school curriculum to match the students with the need of the employers (Omadjohwoefe, 2011; Asuquo, and Agboola, 2014).

Employment skills are job skills that young people need to secure, maintain and develop their jobs. Ismail and [9] note that while some developed countries have taken a step further in technical and vocational education by establishing accredited institutes to develop their graduate employment skills, many developing countries, such as Nigeria, still have professional programs to meet their technical and nation-building national goals. In this regard, [10] noted that the technical education curriculum needs to be restructured and expanded to include employment skills to avoid unemployment. Employability skills are the employment skills needed by the youths not only to help them secure jobs but to ensure their advancement and sustainability on the job [1]. The absence of these skills in the curriculum of Colleges of Education, Technical Education programme have disconnected the students from the requirements of the labour market.

2. Literature Review

2.1 Main Factor Responsible for Massive Youth Unemployment in Nigeria

The lack of employability skills which has been attributed to change in the use and application of technologies gave rise to the challenges of unemployment among graduates [11]. [12] observes that the expectations of the industry from graduates are now shifting from exhibiting academic expertise in a chosen discipline to more commercially informed candidates. These are candidates who have a strong command, and immediate ability to apply a broad range of skills considered essential in the workplace.

[13] opines that employers expect graduates to possess the technical and discipline competencies from their degrees. This will enable the graduates to display broader skills like team-working, communication, leadership, critical thinking, problem-solving and administrative potentials. It is very strongly believed that it is the existence of a skill gap between the school and the industry that is responsible for the massive job losses and unemployment in Nigeria today. Research has suggested that the jobs are there but the graduates lack the skills to match those jobs [14], [15].

Therefore, knowledge and workforce must bear a relationship with the demand of the labour market. The over-dependence on academic qualification has failed to guarantee quality jobs [16][17]. The existence of a skill gap between the school and the industry needed to be bridged. According to [18] the school should be responsible for the training of individuals to enter the labour market. This is

achievable through constant change of curriculum to adjust to the environmental needs [19]. [19] observe that the change should include the existing field of study and not just a new programme. The sudden turnaround to entrepreneurial education by the Nigeria Higher Education managers is an acceptance of the failure of the school curriculum as it is currently operated [20]–[23].

The large number of graduates being turned out year-in, year-out from the nation's Colleges of Education without any corresponding skills to match them with the world of work has made some section of the public to label them as 'half-baked' graduates. This has equally caused [24] to advise Nigerian youths to embrace soft skills. These are the skills other than the hard skills needed for 21st -Century jobs. Consequently, the importance of technical education in the economic growth of individuals and society cannot be overemphasized. [25] opined that the attainment of employers' needs is better learned in the school and key to the employability of graduates. The inculcation of employability skills in the learners would help in producing technical graduates that would match the need of the employers. Thus, reducing the growth rate of social menace in the society.

2.2 Trend and Characteristics of Youth Unemployment in Africa

The alarming rate of unemployment among students of technical education students who graduated from Higher institutions particularly sparked the choice of going deeper in this study. The idea was made due to the growing number of graduated students who roam about the streets and on each occasional contact with this researcher, complained that they are yet to be employed. Though, the challenge is global but, it is more severe with African countries and Nigeria in particular. The percentage of youth unemployment has been on the increase progressively since 2015. In 2015, statistics show that about 73.4 million youth globally were unemployed. The 73.4 million figures indicate that global youth unemployment has increased by about four million since the last global economic meltdown in 2007 [26]. The twenty percent (20%) of the increase occurs in Africa. The worldwide youth unemployment rate was 12.7 percent in 2011. This was a full rate higher than the pre-emergency level [27]. In 2011, youth unemployment in Sub-Saharan Africa where Nigeria belongs (SSA) was slightly higher than the global average at 12.8 percent but with North- Africa average equals 27.1 percent, the highest amongst the regions of the world. This gives an average of around 20 percent youth unemployment in Africa in 2011. Furthermore, youths in Africa are about three times the size of unemployed adults [28]. Youth unemployment is also very high among women in Africa, especially in North Africa [27], [28]. The percentage of joblessness among young women in North Africa was 34.3 percent in 2010. This is high when compared with the 13.1 percent of the world average for that year. The rate for young men was 18.5 percent (compared to the global average of 12.6 percent), both are the highest for

any region. Figure 1.1 shows the global trend of unemployment in the world including Africa between 2010 and 2017. The rate of youth unemployment in 2010 was 13 percent and maintained a slight reduction of 12.9 percent in 2011. Thereafter, there has been a persistent rise in the rate of youth unemployment up to the present 13.9 percent globally. Therefore, the need for a practical approach towards reducing the rise in youth unemployment becomes very important.

2.3 Classification of 21st-Century skills

The learning of employability skills for a better result is achievable in higher institutions on a discipline basis [29]. A broad classification of arrays of employability skills is provided in Figure 1. These are the essential 21st -Century skills that are required in the workplace by employers. The components of each broad area are what is deemed necessary for inclusion into the curriculum of the affected area of studied discipline in higher institutions. [30] Classifies employability skills into personality skills, people skills, applied knowledge skills and workplace skills.

2.4 Overview of Youth Unemployment in Africa

Youth unemployment is currently one of the greatest challenges facing countries globally including African countries and Nigeria in particular. The current wave of social ills and instability in many parts of the world is a direct consequence of hopelessness occasioned by joblessness among the youths. In 2015, statistics show that about 73.4 million youth globally were unemployed. The 73.4 million figures show an increase of more than four million since the start of the global economic meltdown in 2007. About 20 percent of the unemployment occurs in Africa. The youth unemployment rate all over the world has been estimated to be 12.7 percent. This is more than the pre-crisis level in 2011 [27]. In 2011, youth unemployment in Sub-Saharan Africa where Nigeria belongs (SSA) was slightly higher than the global average at 12.8 percent. The North- Africa average was 27.1 percent, the highest amongst the regions of the world. This gives an average of about 20 percent youth unemployment in Africa in 2011. Furthermore, youths in Africa are about three times the size of unemployed adults [31]. Youth unemployment is also very high among women in Africa, especially in North Africa. The unemployment rate for young women in North Africa was 34.3 percent in 2010 compared to the global average of 13.1 percent. The rate for

young men stood at 18.5 percent compared to the global average of 12.6 percent. These are the highest figure in any region of the world. Currently, youth unemployment has risen above 13.0 percent globally. The global total of youth unemployment reached 71 million in 2016, an increase of 0.5 million in comparison to 2015 values. This value is not expected to change in 2017. The increase in the 2016 global figures appears to be due to growing youth unemployment in emerging countries where there is a predominance of evolving technologies. This arose as a result of the industries divesting from production economy to service-based economy. The emergence of advanced robotic automation in some sections of the developed world is equally giving birth to technology unemployment; the 4th - Industrial Revolution is known in some quarters as I4.0 [32]-[34]. This has made skilled workers obsolete due to their sole adherence to hard skills without those skills needed to adapt and blend with the new occurring changes in the world of work [35]. Figure1 describes the trend globally based on developmental classifications.

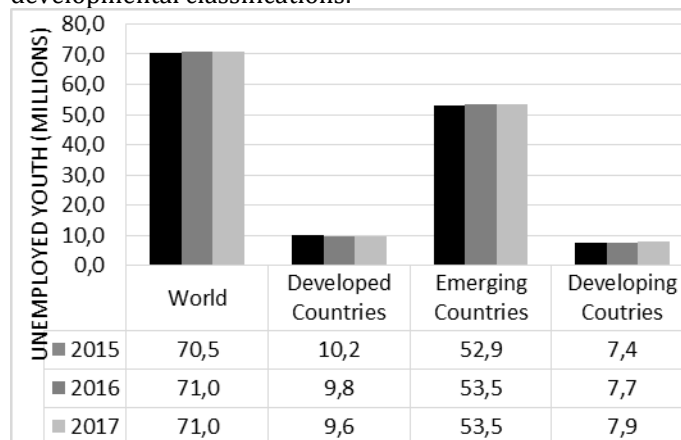


Figure 1. Global youth unemployment and working trend

As shown in Table 1, statistics in 2017 show that about 71.0 million youth globally are unemployed. The 71.0 million figures show an increase of half a million since 2015 with 21.5 percent of them occurring in Africa. Youth unemployment in Sub-Saharan Africa alone where Nigeria belongs (SSA) is 16.3 percent but with North- Africa average equals 21.5 percent, the second-highest after the Asia region. The figure is extremely high for a region and country that is yearning for human and capital development.

Table 1. Youth unemployment trends 2015 – 2017

Region	Unemployed Youth 2015 – 2017 (millions)		
	2015	2016	2017
World	70.5	71.0	71.0
Africa			
Northern Africa	3.7	3.7	3.7
Sub-Saharan Africa	11.1	11.3	11.6
Americas			
Latin America and the Caribbean	8.5	9.2	9.3
Northern America	3.0	2.9	2.9
Arab States	2.6	2.7	2.6
Asia			
Eastern Asia	11.9	11.4	11.0
South-Eastern Asia and the Pacific	7.4	7.7	8.0
Southern Asia	13.7	13.8	13.9
Europe and Central Asia			
Central and Western Asia	2.1	2.1	2.2
Eastern Europe	2.0	1.8	1.7
Northern, Southern, and Western Europe	4.5	4.3	4.1

Table 2. Techniques for teaching employability skills

Employability Skill	Teaching Techniques
Communication	Demonstrations Working in groups Role-playing Writing and presenting written reports
Problem-solving	Decision-making activities Development and designing of models Case studies Investigative projects and research Simulations Using various problem-solving tools and techniques Problem-solving in teams and networks
Technology	Using the internet and Intranets ICT skills to complete activities Using industry-related software, technology, machines and equipment
learning	Mentoring and coaching activities Reflective journals, logbooks, diaries Self-evaluation tools
Self-management	Work plans Career planning exercises Development of portfolios Using logbooks to record time management skills and monitor own performance Work plans
Planning and organizing	Research and data collection Developing action plans Time management activities Planning and organizing events Goal-setting activities and scheduling tasks Collecting and analyzing information
Initiative and enterprise	Brainstorming activities Designing innovative and creative practices and solutions Initiating and designing change process Simulation activities
Teamwork	Group projects Group discussion Learning sets Communities of practice syndicates

2.5 Nigeria Youth Unemployment Rate

According to [27] youth unemployment is a time-bomb ready to explode if the dangerous trend is not urgently reversed. Specifically, Figure 3 attests to the steady and astronomical rise in the rate of youth unemployment in Nigeria between 2017 and 2020. This trend can only be reversed through effective collaboration between the school and the employers of labour with a commensurate framework for matching the students with the need of industries [36], [37].

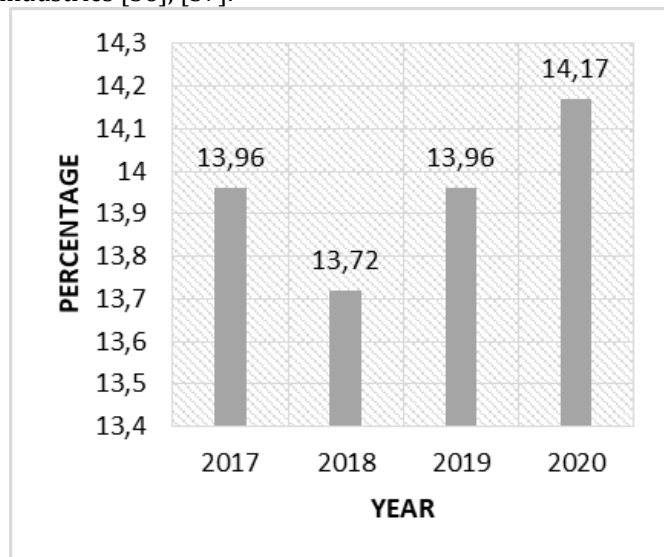


Figure 2. Youth unemployment rate in Nigeria

2.6 Instruction Techniques for Employability Skills

The latest knowledge about Industrial practices is essential for academic staff to be able to teach employability skills effectively in Tertiary Institutions. The lecturers should be aware of how different workplaces function and are structured. Acquisition of instructional skills expertise and knowledge by lecturers are meant to help them move beyond the traditional teaching method, and able to use varying teaching methods and techniques [38]. Technical Education has practical components in both teaching and assessment. Still, the use of varying teaching methodologies and techniques would greatly assist in developing the graduate attributes expected of College of Education students.

Skills development is embedded in teaching and learning [39], [40]. A large number of students and the decaying infrastructures are making it difficult to develop these skills. Instructional development experts, faculty, administrators and students should ensure that learning is competency-based [1], [10]. This will enhance students understanding of experimental methodologies. The Higher Institutions should strive harder to involve the development of the three upper levels of analysis, synthesis, and evaluation of the cognitive domain of Bloom's taxonomy. Bloom's taxonomy consists of knowledge, comprehension, application, analysis, synthesis, and evaluation. This does not mean that a grounding in knowledge, comprehension,

and application is not equally important. They are required to strengthen the higher levels of the domain.

To enhance a pragmatic and strong combination between the development of employability skills by the learners, lecturers and the teaching methods, learning must be problem-based [41]. The approach must be holistic and involve lifelong learning skills, and purposeful too [42]–[44]. Teaching /learning must encompass all the facets of pedagogy and not just facts. The objective must be focused on the learners; learner-centered. Finally, the teacher must assume the role of facilitator, mentor, evaluator, a coach that includes demonstrating the generic skills to learners [45].

Employability skills are attributes that enable one to secure a job and advance progressively on the job. [45] advanced strategies that can be used to teach eight major employability skills successfully. Those suggestions are presented in Table 2.

3. Findings

The data above indicates that youth unemployment is acute in Africa and Southeast Asia. The rate of youth unemployment has equally been growing persistently since the year 2017 in Nigeria from 13.96% to 14.17%. Equally, the rate of youth unemployment is higher in the emerging countries of the world than the developed and developing nations. Out of the global youth unemployment rate of 70.0 million in 2017, the emerging nations have 53.5 million and developed and developing countries have 9.6 and 7.9 million respectively.

The growing rate of unemployment implies that more and more school-age boys and girls are no longer seeing any justification for attending school especially, at the higher levels. This has accounted for the increasing rate of social vices in society today. The wave of armed robbery, kidnapping for ransom, and even ritual killings by Yahoo boys can only be stemmed when we have a functional education curriculum that responds and matches the students with the need of the employers.

4. Discussion

Many institutions of higher learning, especially in the developed world and most of the developing ones, are now introducing employability skills into their curriculum [2], [46]. This is in a bid to ensure that their instructional procedures are compatible with the needs of the employers for 21st-century jobs. It is to be noted that the issue of employability skills is a lifelong process and that no one is ever perfectly employed [43], [47]–[49]. Equally, the issue of unemployment does not exempt any nation whether developed or developing. Unemployment in different countries is occasioned by the different phenomenon; change in technology or skill- mismatch [27], [50]–[52]. Research has shown that most developed countries of the world have developed accreditation bodies for their graduate employability. This, of course, accounts for the low level of youth unemployment in those countries. In the same vein, the rise in the level of technological changes and

automated innovations in emerging countries like Nigeria accounts for the high rate of youth unemployment. The skills acquired during training easily become obsolete at graduation because of rapidly changing and expanding technology [53]. [54] notes that only one out of one hundred Nigerian graduates are employable. This shows that the issue of unemployment in Nigeria has reached a crisis level [55]. The main solution to arresting the trend, therefore, is the remodeling of the technical education curriculum, and reskilling of students in the tertiary institution. This is will help to match them with the need of the employers. Studies revealed that not all teachers are conversant with the changes in the world of technologies and or the right method for teaching students [56]. This necessitated the need for the review of the technical education curriculum. Otherwise, the rate of social ills associated with joblessness will continue to grow in society. The remodeling is not just about changing the curriculum. It is about fixing the missing link. The major missing link established by literature is the non-existence of the skills for 21st-Century jobs in the curriculum [48], [57]–[59][60]. Introducing employability skills into the Higher Education curriculum is not enough. More needed to be done to ensure that it recognizes the discipline-difference and the right techniques of instructions adopted [61]. A successful career is ensured when one is employable [37], [62].

5. Conclusions

To avoid the continuous production of unemployable graduates, the management of our institutions of higher learning especially heads of Higher Institutions should invigorate their curriculum with the skills that are relevant to today's labour market. These are skills that are 21st-century compliant and capable of helping the students to navigate the harmful effect of I4.0. In the same vein, graduate tracking is a database that links graduates with school so that the school would not only be able to monitor their graduates but know where they are, what they are doing and how they are faring. It is a very good feedback process that enables the school to have records of their graduates both employed and unemployed. This will afford Managers of Education to keep accurate data of their employed and unemployed graduates by disciplines, and year. This will eliminate the problem of reliance on guesses and unrealistic forecasts.

Acknowledgments

The authors would like to thank the Management of BOUESTI for permitting access to their Library during the study.

References

- [1] T. Kautz, J. J. Heckman, R. Diris, B. ter Weel, and L. Borghans, "Fostering and Measuring Skills," *Natl. Bur. Econ. Res.*, vol. No. W19656, 2014.
- [2] S. Ismail and D. S. Mohammed, "Employability Skills in TVET Curriculum in Nigeria Federal Universities of Technology," *Procedia - Soc. Behav. Sci.*, vol. 204, no. November 2014, pp. 73–80, 2015.
- [3] Ari Joseph, "Quetion Time," channels Television, Nigeria, 2017.
- [4] S. Emmanuel, "Repositioning technical and vocational education toward eradicating unemployment in Nigeria," vol. 7, no. 6, pp. 54–63, 2015.
- [5] F. Federal Government of Nigeria, "National Policy On Education," Abuja, Nigeria, 2013.
- [6] S. Omadjohwoefe, "Education and the Paradox of Graduate Unemployment : The Dilemma of Development in Nigeria," vol. 5, no. 18, pp. 253–265, 2011.
- [7] o. Sodipo, "Employability of Tertiary Education Graduates in Nigeria: Closing the Skill-Gap," *Glob. J. Hum. Resour. Manag.*, vol. 2, no. 3, pp. 28–36, 2014.
- [8] B. Asuquo, A.E and Agboola, "Nigerian Universities Outputs and Their Employability in the Labour Markets in South," *Am. J. Educ. Reseach*, vol. 2, no. 12, pp. 1244–1249, 2014.
- [9] World Economic Forum, "The Future of Jobs Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution," *Growth Strateg.*, no. january, pp. 2–3, 2016.
- [10] Olojuolawe Sunday Rufus, Nor Fadila Bt Mohd Amin, Adibah Abdul Latif Unemployment Among Technical Students : Implication For Managers of Colleges of Education," pp. 1–17.
- [11] S. McGrath, "What is Employability?," *Learn. to Support Employab. Project*, pp. 1–15, 2009.
- [12] F. Authors, "Personality traits and work performance in a duty-free industry," 2014.
- [13] N. Wilton, "What constitutes employability in the eyes of employers? Dr Nick Wilton- Centre for Employment Studies Research (CESR)," *Better Together*, pp. 1–5, 2012.
- [14] P. Chijioke, "Complex Mix Of Socio-Political Synergy On Technical Vocational Education And Training (Tvet) In Nigeria 2 . Education Issues In Nigeria : The Place Of Tvet Programs," vol. 3, no. 3, pp. 28–40, 2013.
- [15] Babatunde Durosinmi-Etti, "Bridging the Lbour Skill Gap," *The Nation News Paper*, Nigeria, pp. 1–2, 10-Apr-2017.
- [16] David J. Finch; Melanie Peacock; Nadege Levallet; William Foster, "A dynamic capabilities view of employability: Exploring the drivers of competitive advantage for university graduates," *Educ. + Train.*, vol. 58, no. 1, pp. 61–81, 2016.
- [17] Y. Cai, "Graduate employability: A conceptual framework for understanding employers' perceptions," *High. Educ.*, vol. 65, no. 4, pp. 457–469, 2013.
- [18] S. Hasanefendic, M. Heitor, and H. Horta, "Training students for new jobs: The role of technical and vocational higher education and implications for science policy in Portugal," *Technol. Forecast. Soc. Change*, vol. 113, pp. 328–340, 2016.
- [19] L. Amusan, A. Afolabi, I. Omuh, R. Ojelabi, and A. Oluwatobi, "Remodularising Technical Institutions Towards Manpower Delivery in Construction Sector in Nigeria," in *INTED Conference*, 2016, no. March, pp. 4991–4996.
- [20] A. P. Marques, R. Moreira, S. Ramos, C. De Investiga, and U. Minho, "Higher Education , Stakeholders and Collaborative Work for Entrepreneurial Learning," pp. 320–328, 2013.
- [21] M. Sousa, "Entrepreneurship Skills Development in Higher Education Courses for Teams Leaders," *Adm. Sci.*, vol. 8, no. 2, p. 18, 2018.
- [22] J. A. Atan and U. E. Effiong, "Industrialization and Youth Unemployment in Nigeria : An Autoregressive Distributive Lag (ARDL) Approach," vol. 9, no. February 2001, pp. 334–344, 2020.
- [23] F. Grivokostopoulou, K. Kovas, and I. Perikos, "Examining the Impact of a Gamified Entrepreneurship Education Framework in Higher Education," 2019.
- [24] E. . Adeboye, "'Get Soft Skills,'" *The Nation News Paper*, Lagos, Nigeria., p. 1, 11-Dec-2016.
- [25] S. Amedorme and Y. Fiagbe, "Challenges Facing Technical And Vocational Education In Ghana," *Int. J. Sci. Technol. Res.*, vol. 2, no. 6, pp. 253–255, 2013.
- [26] ILO International Labour Organization, "Global Youth Unemployment rate," 2014.
- [27] J. C. Anyanwu, "Does Intra-African trade reduce youth unemployment in Africa?," *African Dev. Rev.*, vol. 26, no. 2, pp. 286–309, 2014.
- [28] C. Paper, F. Pieter, and W. Tno, "First Things First!," in

- [29] M. Jollands, "A Framework for Graduate Employability Adapted for Discipline Difference," *margret.jllands@rmit.edu.au*, 2015. [Online]. Available: margret.jllands@rmit.edu.au.
- [30] N. M. et al. T. Skills, A. Employee, "Common Employability Skills A Foundation for Workplace: A Cross- Industry Approach to Foundational Skills," *Natl. Netw. Bus. Ind. Assoc.*, vol. 8, no. 4, p. 4, 2014.
- [31] ILO International Labour Organization, "Global Youth Unemployment rate," 2017.
- [32] M. A. Frey, C. A., & Osborne, "Technology at work: The future of innovation and employment," http://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi_GPS_Technology_Work.pdf, 2015. .
- [33] C. Du Plessis, "A framework for implementing Industrie 4 . 0," no. December, pp. 46–60, 2016.
- [34] M. A. Peters, "Technological unemployment: Educating for the fourth industrial revolution," *Educ. Philos. Theory*, vol. 49, no. 1, pp. 1–6, 2017.
- [35] M. MacCarthy, "Time to kill the tech job-killing myth," *The Hill*, <http://thehill.com/blogs/congress-blog/technology/219224-time-to-kill-the-tech-job-killing-myth>, 2014. [Online]. Available: <http://thehill.com/blogs/congress-blog/technology/219224-time-to-kill-the-tech-job-killing-myth>.
- [36] A. . Ayodele, "Functional Tvet Curriculum for Achieving MDG VISION," *J. Educ. Pract.*, vol. 4, no. 22, 2013.
- [37] L. Guilbert, J. L. Bernaud, B. Gouvernet, and J. Rossier, "Employability: review and research prospects," *Int. J. Educ. Vocat. Guid.*, vol. 16, no. 1, pp. 69–89, 2016.
- [38] M. Hasan, C. K. Clement, and S. M. Alamgir, "Relationship between occupational skills provided to Polytechnic Diploma Engineers by BTEB and requirement of industry in Bangladesh," *Int. J. Vocat. Tech. Educ.*, vol. 6, no. 4, pp. 43–50, 2014.
- [39] N. Dukhan, "Engineering Leaders Conference 2014 An assessment of the awareness of non-technical skills of future engineers," 2014.
- [40] F. O. Afolabi, "Ameliorating the Problem of Unemployment among Graduates through Relevant , Functional and Sustainable University Education in Nigeria," vol. 7, no. 2, pp. 188–196, 2014.
- [41] Maigari Sada Adamu, "Problem-Based learning Conceptual Teaching Model For Technical Colleges In North Western Nigeria," 2016.
- [42] P. . Vijay, "TVET for Sustainable Development," in *Ministry of Human Development*, India: Ministry of Human Resouces, 2013.
- [43] L. Dacre Pool and P. Sewell, "The key to employability: developing a practical model of graduate employability," *Educ. + Train.*, vol. 49, no. 4, pp. 277–289, 2007.
- [44] S. Kalfa and L. Taksa, "Cultural capital in business higher education: reconsidering the graduate attributes movement and the focus on employability," *Stud. High. Educ.*, vol. 40, no. 4, pp. 580–595, 2015.
- [45] and B. M. D. Mitch, C; Rosalie, F; Seth, F; Rohyn, "Graduate Employability Skills," 2007.
- [46] N. Khalid, N. Abd Hamid, and R. Sailin, "Importance of Soft Skills for Industrial Training Program : Employers' Perspective," *Asian J. Soc. Sci. Humanit.*, vol. 3, no. 4, pp. 10–18, 2014.
- [47] N. Dukhan and N. Rayess, "On teaching non-technical skills for the engineers of 2020," *QScience Proc.*, vol. 2014, no. 3, p. 9, 2014.
- [48] A. Idris and Y. Mbudai, "Technical and vocational education: Challenges towards youths empowerment in Kano state-Nigeria," *J. Tech. Educ. Train.*, vol. 9, no. 1, pp. 1–12, 2017.
- [49] M. Lubyova, "Lifelong Learning is a growing factor in employability," no. September, 2015.
- [50] M. M. Pheko and K. Molefhe, "Addressing employability challenges: a framework for improving the employability of graduates in Botswana," *Int. J. Adolesc. Youth*, vol. 22, no. 4, pp. 455–469, 2017.
- [51] S. Rufus, A. Tunde, A. O. Emmanuel, and N. B. Mohd, "Failure Factors Quality in Vocational and Technical Education in Nigeria Higher Institutions : A Rasch Analysis Approach," no. X, pp. 1–8, 2019.
- [52] O. T. Afolayan, H. Okodua, O. Matthew, and R. Osabohien, "Reducing unemployment malaise in Nigeria: The role of electricity consumption and human capital development," *Int. J. Energy Econ. Policy*, vol. 9, no. 4, pp. 63–73, 2019.
- [53] M. A. Peters, "Technological unemployment: Educating for the fourth industrial revolution," *Educ. Philos. Theory*, vol. 49, no. 1, pp. 1–6, 2017.
- [54] U. Radda, "Poor Skills and Entrepreneurial Competence," *Vanguard News paper*, Akwa, Nigeria, pp. 1–2, 23-Nov-2017.
- [55] S. Emmanuel, "Repositioning technical and vocational education toward eradicating unemployment in Nigeria," *Int. J. Vocat. Tech. Educ.*, vol. 7, no. 6, pp. 54–63, 2015.
- [56] J. L. Cahill, "University Professors' Perceptions About the Impact of Integrating Google Applications on Students' Communication and Collaboration Skills," *J. Res. Initiat.*, vol. 1, no. 2, p. 7, 2014.
- [57] A. Fejes, "Challenging the 'European Area of Lifelong Learning,'" *Challenging 'European Area Lifelong Learn.*, no. September, 2013.
- [58] Stutern, "Nigeria graduate report 2016," 2017.
- [59] International Labour Organization, *Global Employment Trends for Youth 2020: Technology and the future of jobs*. 2020.
- [60] O. S. Rufus, T. Ajayi, B. Joseph, and A. E. Olorunfemi, "Failure Factors Quality in Vocational and Technical Education in Nigeria Higher Institutions : The Use of Rasch Model," no. 9, pp. 186–192, 2020.
- [61] Daihiru Sale Mohammed and Sarimah Ismail, "Employability Skills Definitions And Framework for TVE Graduates Employment In Nigeria," in *Pattern of Inter Institutional And Inter Organizational Collaboration Between Labour Force For Professional Workforce*, 2014, p. 699.
- [62] D. Kintu, K. M. Kitainge, and A. Ferej, "An Exploration of Strategies for Facilitating Graduates ' Transition to the World of Work : A Case of Technical, Vocational Education and Training An Exploration of Strategies for Facilitating Graduates ' Transition to the World of Work : A Case of Techn," no. March, 2019.