



Teacher Resources and Soft Skills for Technical Colleges in Implementing Building Construction Curriculum in Conformity with Industry

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Abstract

Building Construction is a course offered in Technical Colleges in Nigeria, designed to produce competent building construction craftsmen. Upon graduation, craftsmen are awarded National Technical Certificate (NTC) and Advance National Technical Certificate (ANTC). Unfortunately, studies have indicated that graduates at technical colleges' level are not equipped with the employability skills needed by industries. Therefore, they are not ready to enter into labour market. The inadequacy of instructional materials hampers the effectiveness of non-formal training. The provision of equipment for practice of the vocational skills being taught is therefore very essential as it enhances the teaching of the skills by the trainers as well as the learners' acquisition with a very high and lasting impact on improving work performance. Soft skills are skills obtained not through general education, but through personal growth. The soft skills for most professions are more or less the same. They include listening, proper etiquette, stress-management, teamwork, leadership, and ability to inspire other people. These were discussed in the paper and concluded that the challenges posed by the contemporary needs should be addressed ahead and project evolving strategies for better curriculum that can actualize the development of youth for National development.

Keywords: Teacher resources, Building Construction, Soft skills, Curriculum

Introduction

Building Construction is a course offered in Technical Colleges in Nigeria, designed to produce competent building construction craftsmen, upon graduation lead to the award of National Technical Certificate (NTC) and Advance National Technical Certificate (ANTC) as contained in National Board for Technical Education (NBTE) Curriculum (2001). A building construction craftsman has these three options according to the FRN (2013), to either secure employment in the industries, pursue further education in advance craft in a higher technical institution or set up business and become self-employed. Unfortunately, studies have indicated that graduates at technical colleges level are not equipped with the employability skills needed by industries and therefore they are not ready to enter into labour market (Robinson, and Garton, 2007; Rasul et al, 2010; Idris and Rajuddin, 2012; Oresanya et al., 2014; Mohammed and Ismail, 2014; and Legg-Jack, 2016). Thus, the need to

assess the learning resources designed in building construction curriculum and soft skills provided to students in preparation for employment.

In Nigeria, unemployment rate increased from 18.8 percent in the third quarter of 2017 to 23.1 percent in the third quarter of 2018 (National Bureau of Statistics, 2019). Ngige (2019) claimed that unemployment rate in Nigeria would reach 33.5 percent by 2020, which is alarming and require attention of government. Unemployment is one of major problems in Nigeria since it has been increasing for years. This might reflect how the government dealt with Vocational and Technical Education in Nigeria, (Jeerapattanatorn, 2013). These include graduates of building construction from technical colleges who could not achieve required work skill; this could be attributed to lack of teacher resources and soft skills.

Teacher Resources

Teacher resources are learning resources used for teaching a course. Learning resources are things that teachers can access to help them do some aspect of their job better as part of the professional development process, (Schieb & Karabenick, 2011). The teacher resources in building construction curriculum were designed many years ago, so it requires new learning resources as a very vital tool use by teacher for the education of building construction students.

The availability of learning resources supports skills acquisition, these resources include textbooks and in the case of practical vocational training, modern equipment, which enables hands-on training of the students, (Achieng, 2012). The lack and inadequacy of instructional materials hampers the effectiveness of non-formal training. The provision of equipment for practice of building construction skills being taught is therefore very essential as it enhances the teaching of the skills by the trainers, as well as the learners' acquisition, (Achieng, 2012). This has affected the building construction curriculum design and use.

Recent shifts in curriculum research turn to teacher curriculum approaches (curriculum-transmission, curriculum-development and curriculum making for their significant impact on teachers, student learning outcomes and curriculum (Craig 2006; Eisner, 2002; Randolph, Duffy & Mattingly, 2007; Remillard, 1999; Schultz & Oyler, 2006; Shawer, 2010a). The study of curriculum development expands on prior research on the interaction between curriculum design and use. The research explores two forms of agency. The first form of agency is the agency that teachers exercise as they draw from curriculum resources to design instruction, and the transformation to teachers and curriculum resources as they do so (Brown, 2009; Remillard, 2005; Gueudet & Trouche, 2009). The second is the agency imparted by the resources, in that the resources exert an influence on teachers' actions (Davis & Krajcik; Remillard, 2005, 2016). Furthermore, the notion of resource is conceptualized as something to be transformed in use according to teachers' experiences and the context in which they teach (cf. Drijvers, 2012; Ruthven, 2012; Gueudet & Trouche, 2009). Adler (2000) elaborates the notion of re-sourcing to describe how teachers' use of resources (such as textbook or curriculum materials) is transformative, with respect to teachers' development and also to the resource itself. Ruthven (2012) uses the term interpretative flexibility of educational resource to signify how resources get transformed according to teachers' goals and the contingencies of the instructional context. Drijvers (2012) similarly uses the term orchestration to refer to the ways



teachers transform resources into particular uses and forms according to the teachers' goals and factors in the instructional context.

Soft Skills

Soft skills refer to a broad set of skills, competencies, behaviors, attitudes, and personal qualities that are required to enable building construction graduates effectively navigate their environment, work well with others, perform well, and achieve their goals. These skills are broadly applicable and complement other skills such as technical, vocational, and academic skills, (Childtrends 2015). However, a study on the importance of soft skills in the workplace, found that the soft skills gap caused the high unemployment statistic of graduates, Seetha (2014). Soft skills play an important role in determining the success of work performance, and they are required for the success of building construction graduates in an industry.

Soft skills are skills obtain not through general education, but through personal growth. The soft skills for most professions are more or less the same, including building construction. These are listening, proper etiquette, stress-management, teamwork, leadership, and ability to inspire other people, (Cleverism, 2018). Soft skills are centrally important for human capital development of building construction graduates and workforce success. A growing evidence base shows that these qualities rival academic or technical skills in their ability to predict employment and earnings, among other outcomes (Kautz, Heckman, Diris, ter Weel, & Borghans, 2014). As the workplace has modernized around the world, the demand for such skills has increased over the past 20 years (Balcar, 2014; Carnevale, 2013; Eger & Grossmann, 2004; International Labour Organization, 2008). Nevertheless, a soft skills "gap" is noted by many employers around the world, who report that job candidates lack the soft skills needed to fill available positions (Manpower Group, 2013). Therefore, the advocacy for teaching and learning of building construction education with soft skills is imperative.

The implementation of building construction curriculum by teachers is centered on hard (cognitive) skills through overemphasis on the cognitive and psychomotor elements of education. Fortunately, attention has recently shifted to soft (noncognitive) skills for their critical part in student success in the workplace. Cognitive skills concern cognitive (information processing) aspects of learning. In technical education, cognitive skills include, for example, subject knowledge, teaching skills and curricular knowledge. On the other hand, soft skills concern affective aspects of learning, including, for example, problem-solving, teamwork, leadership and thinking skills (Shawer, 2013). Soft skills are becoming vital for 21st century academic and career success as they influence personal development, active and independent learning and employment success (Estelle, 2016; Quieng, Lim, & Lucas, 2015; Stephen, 2014).

Since a complex relationship exists between technical education and teaching quality and student learning outcomes (Darling- Hammond, 2000), these major change agents need soft skills (Hassan & Maharoff, 2014), such as communication, relationships and collaboration, and critical thinking and decision-making. For example, both teachers and students need excellent listening skills to be able to address different teaching and learning needs, interests and styles. Excellent oral skills are also necessary for them to deal with students and convince superiors of their curriculum agenda. Now that relationships and collaboration skills (teamwork, flexibility and cultural

adaptation) are essential for career success, teachers more than other professionals need them to achieve effective collaboration with same and other subjects' colleagues.

Soft skills and work performance in the Industry

For Building construction graduates from technical colleges to survive in the current competitive and dynamic business industry, they need to possess both soft skills and hard skills for effective work performance. Accordingly, most present-day employers in building construction industry expect graduates to demonstrate and excel in many softer skills such as teamwork and group development, (Rothwell and Arnold 2007). Industries are interested in tapping into vital soft skills obtained by graduates during study and periods of work experience rather than just degree-specific knowledge, (Raybould and Sheedy, 2005).

However, work performance has always been an important issue in any industry. Many industries, as a result of a competitive global business environment (Neely, 1999), have made training and development programmes a routine exercise to maintain high work performance. Notably, the overall effectiveness and productivity of an organisation have always been attributed to high work performance, because it has been regarded as a core concept.

Teacher and Curriculum

When building construction teachers implement curriculum, they usually follow a curriculum fidelity, curriculum adaptation or curriculum enactment approach (Ben-Peretz, 1990; Clandinin & Connelly, 1992; Eisner, 1990; Erickson & Shultz, 1992; Jackson, 1992; Munby, 1990; Snyder et al., 1992). The three approaches differ in their treatment of curriculum conceptualization, curriculum knowledge, curriculum change, and the building construction teachers' role. In a fidelity approach, building construction curriculum conceptualization is just "a course of study, a course book series, a guide, a set of teacher plans" alongside predetermined and standardized evaluation instruments and guidelines (Snyder et al., 1992, p. 447). Since an external building construction curriculum team always defines curriculum for building construction teachers, curriculum change starts from the center to the periphery in rational, linear and systematic procedures. In a context similar to this, the building construction teachers' role is that of a consumer who just delivers the curriculum message as intact as possible according to specific building construction curriculum implementation instructions (Jackson, 1992; Snyder et al., 1992).

However, some studies recommended training on subject-content knowledge, pedagogical strategies and curriculum knowledge, (Bell, 1993; Doyle, 1992; Eisner, 1990; Gess-Newsome & Lederman, 1995; Gudmundsdottir, 1990, 1991; Hansen, 1998; Lee, 1995; Shulman, 1986; Spillane, 1999). Other concluded teachers need training on subject and pedagogical knowledge, material writing skills and curriculum evaluation and adaptation skills to develop their curricula (Brooker & MacDonald, 1999; Clemente, Ramirez & Dominguez, 2000; Feiman-Nemser & Parker, 1990; Venezky, 1992; Woodward & Elliott, 1990).

Building construction education in technical colleges has been faced with a lot of challenges including that of stigma, but due to rapid technological advancements many developed countries are very much on top of these challenges (Majumdar, 2011). However, in the developing economics like Nigeria, this system of education still faces those and numerous other challenges ranging from



inadequate quality measures to lack of development of hard and soft skills that can outlast the shifts in the world of work (Yalams, 2016). To ensure that quality, access and purpose of building construction education in the context of these shifts are met, there is need to carefully re-evaluate and overhaul the entire system starting with the building construction curriculum in Nigeria (Yalams, 2016).

The main objective of the building construction education curriculum is to produce qualified technical skilled individuals for self-reliant, employable in both Government and private organizations or further their studies. The motivation to start the so much desired revolution of technological development right from the Nigerian technical colleges is also of immense importance if Nigeria must compete globally. From 2001 when the building construction curriculum was designed to date, a lot of technological developments have taken place which creates the need for identification of new contents for inclusion in building construction curriculum for technical colleges in Nigeria, in order to produce graduates who are competent and relevant in today's work environment. The 2001 edition of the building construction curriculum, which is presently in use, does not adequately address new technological development as well as new knowledge, skills, tools and equipment needed for studying and working modern day bricklaying in building construction as shown in Table 1. This, therefore, has created a gap in the trade theory and practice components of the curriculum, as well as the tools and equipment needed in the study of the new technological developments in building construction.

Table 1: Bricklaying (Module in building construction)

<p>GENERAL OBJECTIVES:</p> <p>On completion of this module, the trainee should be able to:</p> <ol style="list-style-type: none">1. Understand basic workshop and site safety principles and their applications2. Understand the use of various tools and equipment in the bricklaying trade3. Understand the basic principles of manufacture, properties and application of various types of bricks4. Understand the use of material and basic processes in carpentry and joinery5. Understand the main physical properties and application of various types of cements6. Understand the main physical properties and application of various types of aggregates and mortars7. Understand the principles and methods of preparing mortars for building works.8. Understand the basic principles of and be able to carry out simple leveling project construction9. Understand the principles and methods of preparing sites and setting out building10. Understand and be able to apply basic principles and practice relating to substructure construction11. Understand the principles of construction and be able to construct lay concrete ground floors12. Understand the basic principles of construction and be able to construct plan and simple decorative brick walls13. Know materials and methods used in fixing openings14. Understand the function and principles of construction of basic roof types15. Understand the basic principles of design and construction of stairs16. Understand the principles of construction, erection and dismantling of scaffolds in accordance with construction (working places) regulations17. Understand the basic principles of construction of fire place and chinnerys for cooking range18. Know materials and methods used in walling.19. Understand the principles of construction of simple drainage system.20. Understand the basic principles of Kerbs and surface drainage channels to specification.

Source: National Board for Technical Education (NBTE), (2001).

The above module is designed to provide the trainee with the essential knowledge and skill that will enable learners perform competently all aspects of brick-work in the construction industry. But the industries have complained of lack of required skills from the products of these institutions, which may be due to lack of “understand the emerging technologies in bricklaying and application”. Some of the technology resources required for teaching bricking in technical colleges includes: Slide, video player and television, video films (related to the subject matter) diskettes etc, as shown in Table 2. These teacher resources are not available in most technical colleges despite the need for them.



Table 2: General Objective 1.0: Understand Basic Workshop And Site Safety Principles And Their Application.

	Specific Learning Objective:	Teachers Activities	Resources
	1.1 Define and enumerate various hazards in the workshop environment relating same to a construction site situation, and stating their causes and methods of prevention. 1.2 Identify dangerous components in construction tools and equipments e.g. drilling machines, grinding machine, and circular saw, etc. 1.3 Name some dangerous gases and liquids in common use in the workshop or construction site e.g. paint fumes, flammable liquids, acetylene etc.	Teacher should use slides, video films, computer simulation etc. to show and explain proper handling method of construction tools and equipments how to practically prevent accidents both in the workshop and on site when using them. Show specified hand tools and machines to students and explain methods of safe handling of such equipment. Show films and photo clips of some hazards that can be caused by poisonous and dangerous gases e.g. paint fumes, carbon monoxide etc.	<ul style="list-style-type: none"> • Slide, video player and television, video films (related to the subject matter) diskettes etc. • Drilling, circular saws, molding machine etc.

Source: National Board for Technical Education (NBTE), (2001).

Table 2 above, shows some of the learning resources designed in building construction curriculum to teach building construction students. But despite the inadequacy and obsolete (diskettes) of the learning resources, most technical colleges in Nigeria do not have them. Therefore, the need for review of building construction curriculum, in conformity with the building construction industry is imperative.

Theory of Vocational Education

Prosser and Quigley (1949) propounded theories of vocational education, which stated that skill training will be efficient in proportion as the environment in which the learner is trained is a replica of the real environment in which he/she must subsequently work. This denotes that it will be deceitful to training students using obsolete curriculum, while the actual job required the use of curriculum with modern learning resources with soft skills. Training in building construction using obsolete learning resources will certainly produce graduates who will not be relevant on the job unless given a new training to meet the desire of their employers. The theory is relevant to this study because it laid emphases on human resources development through educational activities for skills utilization.

Without student's involvement in Building Construction through modern building construction curriculum, they will not acquire skills for self-development and socio-economic capacitation will be lacking.

Curriculum resources

Curriculum resources as defined by Pepin and Gueudet (2018) are all the material resources that are developed and used by teachers and students in their interaction with building construction curriculum for teaching and learning, inside and outside the classroom. Curriculum standards is a more general term that refers to the legal documents that describe the content and/or learning objectives in compulsory schools, while curriculum materials to be various textbooks, instructional resources, and other resources used by teachers in their daily teaching. In most cases, the legal foundation for building construction teachers' work is rooted in some form of curriculum standards, which are always designed to influence teaching and learning (Egan, 1978). For this reason, building construction curricula design is based on ideas about how building construction teachers should use curriculum, but these ideas may be different among curricula from different contexts (Biesta, Priestley, & Robinson, 2015).

However, Teaching styles of building construction have a direct positive or negative impact on classroom learning. They influence the ways in which building construction teachers organize classroom instruction, how they deal with students, their roles in the classroom and ultimately the taught and learned building construction curriculum (Conti, 2004).

Conclusion

The aim of building construction curriculum in Nigeria will remain unachievable if the challenges posed by the contemporary needs are not addressed and evolve strategies such as soft skills for better work performance of its graduates. The knowledge base of the building construction graduates and society required reformation to meet the global standard in technical education. The skills and belief system are also changing; hence the entire society has gone digital. There is need for reformation in learning resources such as educational policies, curricula, facilities and even the quality of teachers that implement the curriculum. For building construction graduates to be competitive in the present business industries, they need to possess soft skills, which are synonymous with core skills, key competencies and personal skills.

Suggestions

1. Massive continuous orientation and training/programs in soft skills for the in-service teachers toward the utilization of technical college curriculum for effective teaching and learning process.
2. Teachers should also be trained on how to utilize and integrate information and communication technologies (ICTs) in pedagogy.
3. Government and relevant bodies should strive and ensure that technical college curriculum is reformed in-line with the local and international industry needs.



References

- Achieng, N. R. (2012). Factors affecting Acquisition of Vocational Skills among Youth Learners in Maranda Division Siaya County. Being a Research Proposal submitted to the University of Nairobi.
- Adler, J. (2000). Conceptualizing resources as a theme for teacher education. *Journal of Mathematics Teacher Education*, 3(3), 205–224.
- Balcar, J. (2014). Soft skills and their wage returns: Overview of empirical literature. *Review of Economic Perspectives*, 14(1), 3-15.
- Bell, J. S. (1993). Discussion of Kerfoot and Wrigley: Teacher as bridge between program practice. *Tesol Quarterly*, 27(3), 467-475. <http://dx.doi.org/10.2307/3587477>.
- Ben-Peretz, M. (1990). *The teacher-curriculum encounter: Freeing teachers from the tyranny of texts*. New York: State University of New York Press.
- Biesta, G., Priestley, M., & Robinson, S. (2015). *Teacher agency: An ecological approach*. London, UK: Bloomsbury Academic.
- Brooker, R. & MacDonald, D. (1999). Did we hear you? Issues of student voice in a curriculum innovation. *Journal of Curriculum Studies*, 31(1), 83-97. <http://dx.doi.org/10.1080/002202799183313>.
- Brown, M. (2009). *The teacher-tool relationship: Theorizing the design and use of curriculum materials*. In J. T. Remillard, B. Herbel-Eisenmann, & G. Lloyd (Eds.). *Mathematics teachers at work: Connecting curriculum materials and classroom instruction* (pp. 17–36). New York: Routledge.
- Carnevale, A. P. (2013). 21st century competencies for college and career readiness (pp. 1--9). Broken Arrow, OK: National Career Development Association.
- ChildTrends, (2015). What Works/LINKS. From Child Trends <http://www.childtrends.org/what---works/>
- Clandinin, D. J., & Connelly, F. M. (1992). *Teacher as curriculum maker*. In P. W. Jackson (Ed.), *Handbook of research on curriculum* (pp. 363-401). New York: Macmillan.
- Clemente, M. Ramirez, E., & Dominguez, B. (2000). The selection of contents in school project in Spain. *Curriculum Inquiry*, 30(3) 295-317. <http://dx.doi.org/10.1111/0362-6784.00167>.
- Cleverism, C. (2018). 10 Hard and Soft Skills you should have to start your own Business. Available at www.cleverism.com on 14/7/2019
- Conti, G. J. (2004). Identifying your teaching style. In M. W. Galbraith (Ed.), *Adult learning methods* (3rd ed., pp. 75-91). Malabar, FL: Krieger Publishing Company.
- Craig, C. J. (2006). Why is dissemination so difficult? The nature of teacher knowledge and the spread of curriculum reform. *America Educational Research Journal* 43 (2), 257-293. <http://dx.doi.org/10.3102/00028312043002257>.
- Darling-Hammond, L. (2000). Reforming teacher preparation and licensing: Debating the evidence. *Teachers College Record*, 102(1), 28e56. <http://dx.doi.org/10.1111/0161-4681.00047>.
- Doyle, W. (1992). *Curriculum and pedagogy*. In P. W. Jackson (Ed.) *Handbook of research on curriculum* (pp. 486-516). New York: Macmillan.

- Drijvers, P. (2012). *Teachers transforming resources into orchestrations*. In G. Gueudet, B. Pepin, & L. Trouche (Eds.). From text to 'Lived' resources: Mathematics curriculum materials and teacher development (pp. 265–282). Dordrecht: Springer.
- Egan, K. (1978). What Is Curriculum? *Curriculum Inquiry*, 8(1), 65–72.
- Eger, H., & Grossmann, V. (2004). Noncognitive abilities and within---group wage inequality. Bonn: Institute for the Study of Labour.
- Eisner, E. (1990). A development agenda: Creative curriculum development and practice. *Journal of Curriculum and Supervision*, 6(1), 62-73.
- Eisner, E. W. (2002). From episteme to phronesis to artistry in the study and improvement of teaching. *Teaching and Teacher Education*, 18(4), 375-385. [http://dx.doi.org/10.1016/50742-051X\(02\)00004-5](http://dx.doi.org/10.1016/50742-051X(02)00004-5).
- Erickson, F., & Shultz, J. (1992). *Students' experience of the curriculum*. In P. W. Jackson (Ed.), Handbook of research on curriculum (pp. 465e485). New York: Macmillan.
- Estelle, T. (2016).. Investigating the perception of stakeholders on soft skills development of students: Evidence from South Africa. *International journal of e-skills and Lifelong learning*, 12, 1-18.
- Federal Republic of Nigeria (2013), *National Policy on Education*. Yaba: NERC.
- Feiman-Nemser, S. & Parker, M. B. (1990). Making subject matter part of the conversation in learning to teach. *Journal of Teacher Education*, 47(3),32-43. <http://dx.doi.org/10.1177/002248719004100305> .
- Gess-Newsome, J. & Lederman, N. G. (1995). Biology teachers' perceptions of subject matter structure and its relationship to classroom practice. *Journal of Research in Science Teaching*, 32(3), 301-325. <http://dx.doi.org/10.1002/tea.3660320309>.
- Gudmundsdottir, S. (1990). Values in pedagogical content knowledge. *Journal of Teacher Education*, 43(3), 44-52. <http://dx.doi.org/10.1177/002248719004100306>.
- Gudmundsdottir, S. (1991). Story-maker, Story-teller: Narative structure in curriculum. *Journal of Curriculum Studies*, 23(3), 207-218. <http://dx.doi.org/10.1080/0022027910230301>.
- Gueudet, G., & Trouche, L. (2009). Towards new documentation systems for mathematics teachers? *Educational Studies in Mathematics*, 71(3), 199–218.
- Hansen, S. (1998). Preparing student teachers for curriculum-making. *Journal of Curriculum Studies*, 30(2), 165 179. <http://dx.doi.org/10.1080/002202798183684>.
- Hassan, A., & Maharoff, M. (2014). The understanding of curriculum philosophy among trainee teachers in regards to soft skills embedment. *International Education Studies*, 7(12), 84e94. <http://dx.doi.org/10.5539/ies.v7n12p84>.
- Idris, A. and Rajuddin, M. R. (2012). An Assessment of Employability Skills among Technical and Vocational Education Students in Nigeria. *Archives Des Science* 65(7), pp. 392-400.
- International Labour Organization. (2008). *Skills for improved productivity*, employment growth and development. Paper presented at the International Labour Conference.
- Jackson, P. W. (1992). *Conceptions of curriculum and curriculum specialists*. In P. W. Jackson (Ed.), Handbook of research on curriculum (pp. 3-40). New York: Macmillan.
- Jeerapattanatorn, P. (2013). Current Issues on Vocational and Technical Education in Nigeria. *Journal of Educational and Social Research*, 3(10). doi:10.5901/jesr.2013.v3n10p121



- Kautz, T. D., Heckman, J., Diris, R., ter Weel, B., & Borghans, L. (2014). *Fostering and measuring skills: Improving cognitive and non-cognitive skills to promote lifetime success*. Cambridge, MA: National Bureau of Economic Research.
- Lee, O. (1995). Subject matter knowledge, classroom management, and instructional practices in a middle school science classroom. *Journal of Research in Science Teaching*, 32(4), 423-440. <http://dx.doi.org/10.1002/tea.3660320409>.
- Legg-Jack, D. W. (2016). *Employment Skills of Technical College Graduate: A case for Government Technical College (GTC) in Ahoda Rivers State Nigeria*. Retrieved from www.researchgate.net on 29/5/2019
- Majumdar, S. (2010). *Greening TVET: Connecting the Dots in TVET for Sustainable Development*. Proceedings of the International Conference on ESD in TVET organized by CPSC, IVETA, In WeNT TESDA, Nov, 3-5 2010, Manila, Philippines.
- Manpower Group. (2013). *Talent Shortage Survey Research Results*. Milwaukee, WI: Manpower Group. mind, experience, and school (expanded ed.). Washington, DC: National Academy Press.
- Mohammed, D.S. and Ismail, S. (2014). *Employability Skills Definitions and Framework for TVET Graduates' Employment*. Proceedings of the 1st TVEIS International Seminar on Technical and Vocational Education, UTM, Johor Bahru, Malaysia, August 25-26, pp. 682-694.
- Munby, H. (1990). Metaphorical expressions of teachers' practical curriculum knowledge. *Journal of Curriculum and Supervision*, 6(1), 18e30.
- National Board for Technical Education (NBTE), (2001). National technical certificate examination (craft level) syllabus for engineering trades based on the NBTE modular curricular. Kaduna: NBTE.
- National Bureau of Statistics. (2012). *Nigeria Unemployment Rate*. Abuja: National Bureau of Statistics. Retrieved from <http://nigerianstat.gov.ng/>
- Ngige, C (2020). Nigeria's unemployment rate hits 33.5 percent by 2020-Minister. Retrieved from www.premiumtimesng.com on 26/7/2020.
- Neely, A. (1999), "The performance measurement revolution: why now and what next?", *International Journal of Cooperation and Production Management*, Vol. 19 No. 2, pp. 205-228.
- Oresanya, T.O., Omudewa, O.S., Kolade, T.T. and Fashedemi, A.O. (2014). Vocational Education and Employability: The Nigerian Situation. *Journal of Poverty, Investment and Development- An Open Access International Journal*, 3, 158-160.
- Pepin, B., & Gueudet, G.(2018). *Curriculum resources and textbooks in mathematics education*. In S. Lerman (Ed.).*Encyclopedia of mathematics education* (pp.132– 135). Cham: Springer International Publishing.
- Prosser, C. A. & Quigley, T.H. (1949). *Vocational Education in Democracy*. America Technical Society.
- Quieng, M., Lim, P., & Lucas, M. (2015). 21st century-based soft skills: Spotlight on non-cognitive skills in a cognitive-laden dentistry program. *European Journal of Contemporary Education*, 11(1), 72e81. <http://dx.doi.org/10.13187/ejced.2015.11.72>.

- Randolph, D., Duffy, E. & Mattingly, K. (2007). The 3 P's of Curriculum redesign principles, personal qualities and process. *Independent School*, 66(3), 86-92.
- Rasul, M.S; Ismail, M.Y; Ismail, N; Rajuddin, M.R. and Abdu Rauf, R.A. (2010). Development of employability skills assessment tool for manufacturing industry. *Journal Mekanikal*, No. 30, pp. 48-61.
- Raybould, J. and Sheedy, V. (2005), "Are graduates equipped with the right skills in the employability stakes?", *Industrial and Commercial Training*, 5 (1), 259-263.
- Remillard, J. (199).Curriculum Materials in Mathematics education reform: A framework for examining teachers' curriculum development. *Curriculum Inquiry*, 29(3), 315-342. <http://dx.doi.org/10.1111/0362-6784.00130>.
- Remillard, J. T. (2005). Examining key concepts in research on teachers' use of mathematics curricula. *Review of Educational Research*, 75(2), 211–246.
- Remillard, J. T. (2016). Keeping an eye on the teacher in the digital curriculum race. In M. Bates, & Z. Usiskin (Eds.). *Digital curricula in school mathematics* (pp. 195–204). Charlotte, NC: Information Age Publishing.
- Robinson, J.S. and Garton, B.L. (2007). An Assessment of the Employability Skills Needed by Graduates in the College of Agriculture, Food and Natural Resources at the University of Missouri. *Journal of Agricultural Education*, 49(4), 96-105
- Rothwell, A. & Arnold, A. (2007). Self-perceived employability: development and validation of a scale. *Personnel Review*, 36 (1), 23-41.
- Ruthven, K. (2012). *Constituting digital tools and materials as classroom resources: The example of dynamic geometry*. In G. Gueudet, B. Pepin, & L. Trouche (Eds.). *From text to 'Lived' resources: Mathematics curriculum materials and teacher development* (pp. 83–114). Dordrecht: Springer.
- Schieb, L. J. & Karabenick, S. A. (2011). *Teacher motivation and professional: A guide to resources*. Retrieved from www.teachingenglish.britishcouncil.org.com on 23/7/2020
- Schultz, B. & Oyler, C. (2006). We make this road as we walk together: Sharing teacher authority in social action curriculum project. *Curriculum Inquiry*, 36(4), 424-451. <http://dx.doi.org/10.1111/j.1467-873X.2006.00365x>.
- Seetha, N. (2014). Are Soft skills important in the workplace? A preliminary investigation in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 4 (4), 44-56.
- Shawer, S. F. (2010a). Classroom-level curriculum development: EFL teachers as curriculum-developers, curriculum-makers and curriculum-transmitters. *Teaching and Teacher Education: An International Journal of Researcher and Studies*, 26(2), 173-184. <http://dx.doi.org/10.1016/j.tate.2009.03.015>.
- Shawer, S. F. (2013). Initial teacher education: Does self-efficacy influence candidate teacher academic achievement and future career performance? *Journal of Further and Higher Education*, 37(2), 201e223. <http://dx.doi.org/10.1080/0309877X.2011.645448>.
- Shulman, L. S. (1986). Those who understand: knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14. <http://dx.doi.org/10.3102/0013189X015002004>.



- Snyder, J., Bolin, F., & Zumwalt, K. (1992). *Curriculum implementation*. In P. W. Jackson (Ed.), *Handbook of research on curriculum* (pp. 402 - 435). New York: Macmillan.
- Spillane, J. P. (1999). External reform initiatives and teachers' efforts to construct their practice: The meditating role of teachers' zone of enactment. *Journal of Curriculum Studies*, 31(2), 143-175. <http://dx.doi.org/10.1080/002202799183205>.
- Stephen, G. (2014). Soft skills assessment: Theory development and the research agenda. *International journal of Lifelong Education*. 33(4), 455-471.
- Venezky, R. I. (1992). *Textbooks in school and society*. In P. W. Jackson (Ed.). *Handbook of research on curriculum* (pp. 436-461). New York: Macmillan.
- Woodward, A. & Elliott, D. (1990). *Textbook use and teacher professionalism*. In D. Elliott, & A. Woodward (Eds.). *Textbooks and schooling in the United States*. Vol. 89 Pt.J. Eight-ninth yearbook of the national society for the study of education (pp. 178-193), Chicago: Chicago University Press.
- Yalams, S. M. (2016). *Twenty First Century Global Changes in Education: Implications for Sustainable Development*. A Lead Paper Presented and Published in a Book of Proceedings for the 4th International Conference for School of Science and Technology Education, Federal University of Minna, Niger State, Nigeria on 4th – 7th October, 2016.