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SKILLS FOR 21ST CENTURY TEACHERS

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DEDICATION

Dedicated to the International Institute for Policy Review &
Development Strategies for providing a platform and supporting
Institutional and Collaborative Research and Sustainable
Development.

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Contributors are greatly acknowledged for supporting the agenda towards achieving the Skills for 21st Century Teachers in the world, especially in Africa.

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INTRODUCTION

Beyond Education, Skills are Critical for
Self-Reliance: Imperatives for Policy
Makers, Teachers and Learners

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Education is not just a sector or an institution, but a philosophical force of its own with positive implications for human development. Education is said to be an organized mechanism, through which society develops its human resources by equipping them with desirable knowledge, skills, attitudes and values which will enable them operate the social institutions of a given country or nation effectively. In other words, education plays a great role in a country, it helps in every field of life; it informs and transforms the mind of the individual, builds confidence on social relations and approach to things.

Education is a fundamental human right as entrenched in the United Nations Charter. Education enhances people's ability, increases the supply of skilled labour, and improves adaptability and quality of workers and increases workers' efficiency and productivity. This essence in socio-economic development is well captured in the Nigerian National Policy on Education, "Education is an instrument per excellent for achieving national development in other words, any meaningful growth and development must be preceded by a sound education planning. Since education constitutes an indispensable aspect of social realities of a nation, it is therefore cardinal to any society".

One of the problems of the Nigerian state is that a greater percentage of its populations are illiterate; most lack access to formal education, while others are educated, but are "educated illiterate" because they lack requite skills for job creation and self-reliance, or/ and are not employable. There are statistics to prove this,

1. In 2015, adult illiteracy for Nigeria was 41.3 million. Adult illiteracy of Nigeria increased from 24 million in 1991 to 41.3 million in 2015 (https://knoema.com).

2. The Minister of Education, Adamu Adamu, at the opening of the 2017 Nigeria's Annual Education Conference held under the titled: 'Achieving Inclusive Education through Innovative Strategies' expressed concern over the country's high rate of illiteracy, saying some 60 million Nigerians, or 30 percent of the population, cannot read or write. He added that females account for nearly 60 percent of the country's illiterate population (Premium Times, November 23, 2017).

3. The National Commission for Mass Literacy, Adult and Non-formal Education (NMEC), said recently that 35 per cent of the nation's adult population was illiterate. According to NMEC, literacy rate is the percentage of people from the age of 15 and above who can read and write simple statements on their everyday life. NMEC therefore considers it 'shameful' that in the 21st century; a country like Nigeria could have that huge number of illiterates. It has therefore tasked the authorities in the 36 states to ensure that the 774 local government areas were well equipped and empowered to improve national literacy levels (Thisday, April 12, 2019).

Education is not only necessary for the individual's survival but it is significant for self-reliance and national development. The growth of any society is dependent on the level of education of its citizens. This is one of the biggest challenges of the Nigerian state as most of her population is illiterates. They educated once do not requisite skills for self-reliance.

It is well said by an individual, "Education is more important but skill is the most important". Beyond learning, skills are important in the development of an individual. Skills are the abilities for adaptive & positive behavior that enable human beings to deal with every life challenges & situations effectively. One needs them to make the

most out of life. In short, skills that are useful in life can be considered as life skills. In the face of increasing development challenges, lack of employment, increasing level of poverty and limited opportunities, these skills are essential to the individual learner for self-reliance. Thus, it is important to evolve skill training among children from an early age itself.

The educational system must be designed to not just teach children but teach and impact requisite skills needed for survival in the society. The school system must evolve activities like critical thinking, creative art & craftwork, decision-making, problem-solving, and ability to collaborate & communicate along with a sense of responsibility towards personal as well as society at large. Experts say these life skills must be made compulsory in school education as without learning these skills, children will struggle when they come out to face real-world responsibilities. Therefore, it becomes necessary that schools provide their students with these types of basic mental, social & physical skills to make them ready for leading a better after-school life. Some of the skills identified by The Asian School, Dehradun, India include,

1. Collaboration across networks
2. Finding new ways of problem-solving ability with critical thinking.
3. Imagination & curiosity
4. Agility & adaptability
5. Initiative & entrepreneurialism
6. Oral & written effective communication
7. Accessing & analyzing information.
8. Potential to lead by influence
9. Working well as part of a team
10. Time and people management

Drawing reference from their position, they reiterate that schools in India, at large, adopt an academic-centric model of Education. For the most part of schools, the learning process is confined only to classrooms. In fact, this process is more about gaining facts & less about learning. The very best way to address this problem is to introduce life-changing skill training in the school-based curriculum. Giving them some options at the onset of teenage gives them the chance to explore & learn more things beyond their textbooks & whatever is taught in classrooms. One more

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[1]The Asian School, Dehradun, India, "Importance of Skill Development in Education", https://www.theasianschool.net/blog/importance-of-skill-development-in-education.

advantage of introducing Life skill for kids is that they get the freedom to choose at an early age. Skills like team-spirit, inquisitiveness, creativity, trustworthiness, sympathy, co-ordination, assertiveness and much more comes with life skill activities. In addition to computer literacy, educational institutions will produce graduates that can compete globally.

The Nigerian school system, when compared to those of developed nations, can be found to be inadequate in structure, facilities and equipment. Besides the archaic method of operations; manual record-keeping, use of blackboards and chalk, endless copying of notes and use of outdated textbooks without access to new material, the system is not positioned to teach life skills to learners. Learning and teaching methods become boring and non-progressive. It therefore means that the teachers themselves must be trained and equipped with relevant skills for innovation. This revolution must begin with acquiring relevant technological learning and innovative skills. The Book, **Skills for 21st Century Teachers**, provides research insights that bridge this gap for the policy makers, teachers and learners.

Institutional Research & Policy Finding

Institutional Research & Policy Finding

Configuring the 21st Century Classroom: Technology Integration and its Effects on Students, Teachers, and Parents

by

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Introduction

Configuring the 21st Century Classroom is a project that the West Ada School District has undertaken as a part of its participation within the League of Innovative Schools. This project began during the 2012-2013 school year and is continuing today. As part of this innovative project, research is being performed looking at how classroom technology influences students, teachers, as well as parents. The purpose of this endeavor is to determine what types of technology and its classroom use motivates and engages students to higher levels of learning, enables parents to become more involved in their students' learning, and makes the already difficult job of teaching more effective and productive. By answering these questions, it becomes possible to create technology-rich learning environments that are beneficial to all parties involved and to ensure our students are using the tools of the 21st Century to acquire 21st Century skills.

After the first year of our study we concluded that "the teacher has the greatest impact" on classroom outcomes. Large variations found at the teacher level were found for outcomes such as student standardized test scores, student reported

engagement, as well as measures of collaboration and problem-solving-- all backing up the previous claim. We determined that "the effective use of technology is certainly something that will take time and collaborative effort in order [for teachers] to create lessons and pedagogy that can maintain continual engagement with [increased outcomes] for our students." Following the second year of our study significant differences began to appear, which we postulate are directly due to the collaboration and culture-building resulting from teachers working toward a common goal. Though no significant differences were found between these groups on standardized test measures, the data below indicate that technology-rich instruction can indeed be more collaborative in nature than a traditional classroom. This increased collaboration and use of relevant tools is shown to heighten student engagement and interest. This brings into question the possibility that our standardized tests may not be capable of detecting outcomes related to these higher levels of engagement and the building of 21st Century Skills.

Fig. 1: Student and teacher survey comparison- 21st Century Classroom vs. Traditional
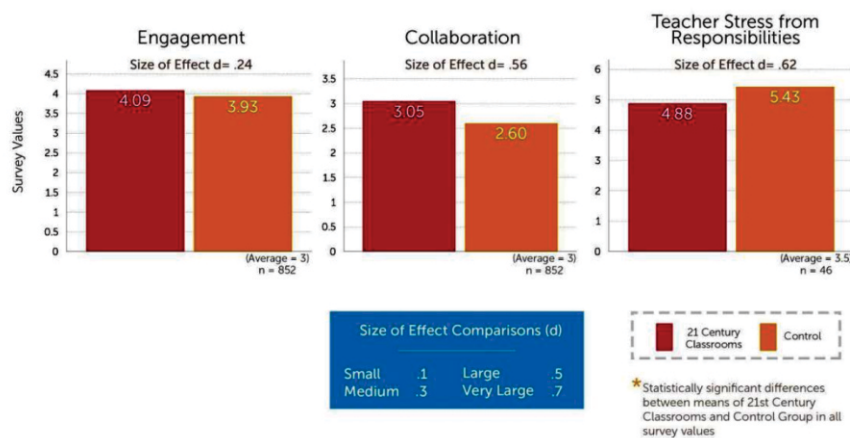
This increased collaboration and engagement however, does not occur by simply emplacing the technology into classrooms. Targeted and sustained teacher training accompanied by ample time for peer-to-peer collaboration seems to be essential to allow teachers to become comfortable with these tools- as well as to develop this new student-centered pedagogy. It is the creation of these collaborative environments that we feel is leading to positive outcomes within these classrooms.

The results also indicate that after an initial period of difficulty, teacher stress can be decreased due to the technology tools. This positive outcome came about as teachers became "facilitators of learning," orchestrating student-centered activities, rather than simply presenting information. The technology also performed some of the mundane classroom tasks freeing the teacher to spend more time working directly with students. In short, the technology helped them become more effective at their jobs- the ultimate purpose for any technological endeavor.

Parent surveys indicated that our community sees the need for technology in our classrooms as well. Our research indicates that, as many parents are initially unsure of how these new tools fit into what they envision as a working classroom, these mindsets change over time as they become familiar with new classroom models and new classroom tools. In fact, the majority of parent comments from the technology-rich classrooms were highly positive toward technology integration. These parents spoke of the concern they felt as students would possibly move from high-tech classrooms back to more traditional ones. This contrasted the remarks by parents within more traditional classrooms in which comments were more neutral or apprehensive about the use of these tools. Most parents were cognizant, however, of their students' need to become fluent in the typical tools of today's modern society in order to become career and college ready.Based on the information gleaned from West Ada's 21st Century Classrooms project, in combination with several other technology-based projects occurring within the district, we now have a clearer view of what technology integration will look like in our classrooms and what it will take to get there. It is obvious that the use of these tools will provide our students with 21st Century skills, individualized learning experiences, and ultimately help teachers perform their jobs more effectively. The culture that is created based upon the integration of these new tools is a powerful motivator for student and teacher alike. Just as a city, with its increased and densely-packed population is a source of innovation and creativity, so too can a school or district become a center for innovation if a "tipping point" can be reached by teachers engaged in the process.

As West Ada School District implements these new models and tools, we must be sure to harness the information created in an attempt at preventing those who come after from re-inventing the wheel- which in most cases leads to struggle, frustration, and ultimately reversion back to previous practice. The latter cannot be an option if we are to engage our "digital native" students to higher levels of learning in student-centered ways. As Michael Fullan (2008) states however, "learning is the work." With

consistency and a culture of innovation, followed by the spread of this information through systems that enable collaboration and connecting with peers, teachers will build effective models "from the ground up." This research is a small piece of the puzzle aimed at showing results that are occurring throughout the process.

Institutional Research & Policy Finding

FUTURE FRONTIERS ANALYTICAL REPORT
Key Skills for the 21st Century: An Evidence-Based Review

by

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Introduction

Recent analysis examining trends in technology, the economy and the labour force shows that the world of work is changing. Based on an analysis of trends in the work of Australians each year, a new study has predicted that 'as technology reduces the need for workers to complete routine, manual tasks they will spend more time focusing on people, solving more strategic problems and thinking creatively' (FYA, 2017). This has led some to the view that as well as deep and broad knowledge in key disciplines, students will need a range of skills and capabilities, including creative and critical thinking and problem solving, in order to thrive in the future world. But, what are the skills future generations will need? Have they found their way yet into teaching and learning in schools? How can we make sure that schools are able to teach and transmit them?

This report considers the implications of these crucial questions for Australia, and it does so recognising that while there is a lot of discussion around the topic of key skills for the 21st century, there is little agreement yet about what the skills actually are, let

alone whether they can be taught, measured or assessed. The reflections in this report, therefore, are somewhat speculative and need to be viewed as adding to the ongoing discussion around the skills our education system needs to consider in building courses and curricula for better preparing young people for their future lives. Its aims are modest: to bring together some of the current thinking around this topic and also to consider some of the work on the teaching and assessment of the skills future generations will need.

Key Points
What are the Key Skills?
There is general agreement that schools need to be more than 'ATAR factories'. In other words, school systems are expected to do more for students than just focus on preparing them for academic tests and improving their test scores. From a holistic point of view, schooling should be helping to equip young people with the tools they need to become engaged thinkers, resilient and resourceful learners, creative problem solvers and active members of their communities.

A wide range of skills and related dispositions are regularly considered as vital for schooling in the 21st century, including thinking skills, social and emotional skills, and attitudinal skills such as motivation and self-efficacy. The relevant skills form a dense conceptual web, that is, the constructs are related in complex ways and sometimes overlap one another. It is difficult to establish a clear distinction between knowledge, skills and dispositions based on student behaviours. Accordingly, various theoretical frameworks attempt to make sense of this complexity.

While identifying the skills considered most important is challenging, the following have in particular received close and concerted attention from policy makers, researchers and practitioners:
   a. critical thinking
   b. creativity
   c. metacognition
   d. problem solving
   e. collaboration
   f. motivation
   g. self-efficacy
   h. conscientiousness, and
   I. grit or perseverance.

This list, while neither exhaustive nor unassailable, is the product of a careful review of educational literature and research, as well as Australian and international frameworks for learning. These skills and related constructs include those most frequently found in different frameworks and related 21st century skills discussions. All of these skills can be learned and developed, although the extent to which their development can be induced in a school context varies. Evidence suggests that most of these skills and dispositions can be transferred across contexts, although they are better considered as partly context- or content-dependent rather than purely generic. For example, being skilled in creative and critical thinking in mathematics may not translate into creative and critical thinking in English. Some of the skills are correlated with academic achievement, though it is important to note that there is limited understanding of the causal mechanisms at play.

Teaching Key Skills for the 21st Century
A number of jurisdictions across the world have selected different skills and attributes and established them as learning outcomes for students in primary and secondary schools. Jurisdictions have deployed system-level approaches seeking to improve the acquisition of key skills through improved teaching and learning. Several education jurisdictions are presented in this report, showcasing a range of implementation models, with consideration of successes and challenges. Most, if not all, of these jurisdictions have developed learning frameworks that are consistent with the national goals for schooling articulated by Australian Education Ministers, which call for schooling to support the development of broader skills in areas such as social interaction, cross-disciplinary thinking and the use of digital media, as well as in areas such as citizenship and contribution to community (Melbourne Declaration on Educational Goals for Young Australians, MCEETYA, 2008, p. 5).

Jurisdictions have typically articulated their commitment to improving key skills for the 21st century by defining broad goals of learning and establishing a list of interconnected skills needed to promote these learning outcomes. As an example, Alberta has placed the notion of a 21st Century Learner as a central fulcrum for its curriculum design. It has established three broad goals of learning, with schooling geared towards ensuring young people are given opportunities to become (1) engaged thinkers, (2) ethical citizens and (3) entrepreneurial. As well as literacy and numeracy skills, critical thinking, problem solving, decision making, creativity and innovation, communication, self-management, social responsibility and digital fluency are the interconnected skills viewed as critical to promoting the Albertan 21st Century Learner.

While most systems have been active in developing learning frameworks and looking at ways to incorporate skills into their curricula, and while some jurisdictions have invested in teacher training and professional development to promote these key skills, there is limited evidence to date of a widespread and successful transformation of classroom practice and assessment. Most systems recognise that the key skills need to be developed through teaching disciplines and subject content, as well as potentially *across* subject areas; yet no school system can yet demonstrate a generalised and consistent focus on key skills across schools, subjects and year levels.

Effective reform is likely to involve approaches that consider teaching standards, assessment, curriculum and instruction, professional development and learning environments. It is the interrelated impact of these facets of education that can foster the conditions for more systematic learning of key skills. Successful policy implementation needs to be accompanied by strategic investment in building the capacity of all teachers, across school and classroom contexts.

Measuring and Assessing Skills

A critical hurdle for many school systems in developing and implementing key skills is establishing valid and reliable measures and assessment tools. While there has been significant attention paid to the development of frameworks and typologies of skills, much less attention has been given to their measurement and evaluation.

The three main ways of assessing student skills are: (1) student surveys (to obtain self-reported estimates of skill levels); (2) direct assessment using tests similar to those used for literacy and numeracy; and (3) teacher judgements (or reporting) on skill levels. All three have their strengths and limitations.

The suitability of an assessment method depends on the type of skill being assessed. The skills that are sometimes referred to as traits or 'soft skills' (e.g. grit, self-efficacy, conscientiousness or communication), are difficult to measure using direct assessment, and measurement tends to rely on self-reporting (generally based on psychological survey inventories). Direct assessment is more easily applied where the skills are closer to those traditionally recognised as 'cognitive' and where tests have historically been used.

Purpose is another critical aspect to consider when choosing a method of assessment. There are four primary assessment purposes in school systems:

(1) Monitoring student learning and progress (individually and collectively),
(2) Supporting instructional improvement,
(3) Monitoring system performance, and
(4) Setting priorities by signalling to teachers and parents which competencies are valued.

A given assessment purpose can be better served by some assessment methods than others: for instance, teacher judgement can be particularly beneficial to instructional improvement, as it is direct and immediate, and many systems currently favour student self-report when considering broader skills, as it provides brevity at a relatively low-cost.

A judicious combination of various assessment methods, based on scores as well as qualitative assessment and determined by the assessment purpose(s) and the skill(s) being assessed, appears likely to improve the assessment of key skills and their acquisition by students. Assessment of key skills for the purpose of monitoring system performance would require careful attention to the strengths and limitations of each assessment method.

Further Work

The review undertaken for this report has confirmed, among other things, that many systems and schools have invested considerable effort in broadening their conceptualisation of the skills young people require for their future. At the same time, there is little evidence providing clear direction on the most effective approaches to the teaching and learning of the identified skills, as well as the best ways to assess them. It also remains uncertain whether these policy designs are reinforced with appropriate support provided to teachers and schools to meet the expectations placed upon them. While examples of successful practice exist in the research literature, school systems are still working to provide a coherent approach to embedding key skills across the various stages of schooling, and to evaluate more systematically how the emphasis on key skills impacts on the work of teachers, schools, as well as on student learning and outcomes.

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Institutional Research & Policy Finding

Teaching and Learning for the Twenty-First Century

by

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Educational Goals, Policies and Curricula from Six Nations
Chile
China
India
Mexico
Singapore
United States

About the Global Education Innovation Initiative

The Global Education Innovation Initiative at the Harvard Graduate School of Education is a cross-national research collaborative established in 2013 with collaborators in Chile, China, India, Mexico, and Singapore. Our goal is to understand in what ways K-12 education institutions are equipping youth with the competencies necessary for life, work and civic participation in the 21st century.

Recognizing the important achievements of the Global Education Movement started with the inclusion of the right to education in the UN Universal Declaration of Human

Rights in 1947 in expanding access to basic education to the majority of the world's children, and the ongoing efforts of governments around the world to enhance the quality of education, the initiative addresses the need for enhancing the relevance of education, by supporting the capacities of teachers and other educators to construct opportunities to learn that help students develop a full range of cognitive, social and emotional competencies, that allow them to live fulfilling lives and to participate economically, civically and to contribute to the achievement of the Sustainable Development Goals. Our efforts seek to support schools in developing the full range of human capabilities and consequent expansion of agency and freedom, with particular emphasis in the children of the poor and marginalized populations. We see these efforts as aligned with UNESCO's led global consultation resulting in the landmark report Learning, The Treasure Within, with the movement of 21st century education, and with the movement of socio-emotional learning in schools.

Our work is structured in three interdependent pillars:
Convene
To articulate a global network of institutions committed to the study and practice of 21st century education.

We seek the development of communities of leaders of education systems and allied institutions supporting the improvement of educational relevance aligned with the goals of the initiative. This global network will be engaged in activities that support learning of the participants in ways that lead to greater institutional and collective impact of the participants.

Research
To engage in a systematic scientific study of 21st century education.

Based on the premise that there are already ongoing efforts to increase the relevancy of education around the world, the aim of this pillar is to identify, study, and disseminatae this knowledge in ways that it can support organizational learning and increase the effectiveness of the global network addressed in the activities in the first pillar, and of other institutions and actors interested in the advancement of 21st century education.

Educate
To develop interventions to support the transformation of school systems at scale towards greater relevance in offering opportunities for students to learn 21st century competencies.

These activities involve the development of programs, in partnership with institutions working to support the improvement of educational opportunity.

Teaching and Learning for the Twenty-First Century
Education Goals, Policies, and Curricula from Six Nations

Executive Summary
Discussions about how to prepare students for civic and economic participation in the 21st century highlight the need for them to ac-quire key competencies beyond the basics, such as digital, civic, self-knowledge and interpersonal competencies, among others. In this context, how are instructional priorities represented in national curricular frameworks? How do these frameworks reflect the competencies that students need to thrive in the 21st century, as identified by research?

In this book, researchers from Chile, China, India, Mexico, Singapore, and the United States discuss these questions and present findings from their respective studies about how national curricular frameworks and policies define, support, and encourage the competencies that students need to thrive in the 21st century.

Scholarly Significance
While discussions about educational priorities and policies are not new, there exists little research that looks at the mechanisms by which these purposes of education are

made into policy and prioritized to help develop and support relevant competencies in students; we know even less about how these processes and skills may be influenced by social, political, and other contexts. This book seeks to address this knowledge gap by adding to the body of international comparative research on educational policy and curriculum studies.

The book aims to foster discussions on how national education policies support students to prepare for life, work and civic participation in the 21st century. It examines how educational goals, perceived challenges, and opportunities reflect historical, political, and cultural contexts of education systems varying in size, governance, and demographics, among others. Discussions in the conclusion about shared challenges and different solutions will spark ideas for next steps in international comparative research and in the practice of education in the 21st century.

Table: Student enrollment 1 in studied countries and the world2

country	Total Students Enrolled		Percentage of Students enrolled (Gross)		GNP Per Capita (PPP)
	v	Secondary	Primary	Secondary	
Chile	1,472,348	1,571,374	100%	99%	$21,942
China	98,870,818	94,324,415	126%	92%	$11,907
India	139,869,904	119,148,200	114%	71%	$3,813
Mexico	14,837,204	12,467,278	105%	88%	$16,370
Singapore	294,602	232,003	n.a.	n.a.	$78,763
United States	24,417,653	24,095,459	98%	94%	$53,042
Sum	**279,762,529**	**251,838,729**			
World	**712,994,323**	**567,831,226**			
Percentage	**39%**	**44%**			

Figures are for 2013 or nearest available year

Findings

The study draws three broad conclusions:

1. The six countries studied – Chile, China, India, Mexico, Singapore, and the United States – all recognized that educational goals for all students needed to be broadened.
   a. They designed new curricular frameworks in response to the perceptions that the demands of the labor market were changing and that civic participation would require greater sophistication and responsibility.

    b.   Governments in each country led or contributed to the development of these curriculum frame-works, often in collaboration with civil society groups and drawing on the work of supranational organizations.

2. In most of the countries studied, cognitive goals continue to dominate and interpersonal and intrapersonal competencies receive less emphasis in the curriculum.
   a. Each country emphasizes different competencies. For example, Singapore stands out with its strong emphasis on values-based education. Chile and Mexico stands out with their focus on democratic citizenship education. India's curriculum framework is arguably the most holistic and broadest in terms of its goals. The United States and China emphasize higher order cognitive skills in their curriculum standards.
   b. Underpinning these various emphases, how-ever, there are more commonalities than are apparent on the surface. Countries may use different language when addressing similar competencies. For instance, citizenship education in Chile and in Mexico invokes many of the same interpersonal and intrapersonal competencies that are reflected in Singapore's values-based education or in India's emphasis on global citizenship and education for peace.

3. While the six countries had much in common in terms of the goals of their education reform, their approaches to implementation differed significantly, and implementation of these broader curriculum frameworks remains a challenge.
   a. Implementation plans included the development of new textbooks for system-wide use, the organization of new teacher education programs, the establishment of partnerships with businesses and NGOs, and the identification of schools for pilot implementations, among many others.
   b. The varying degrees of centralization and de-centralization in countries shaped their experiences of policy implementation. In Singapore, the country's relatively small size and the strong partnerships between the Ministry of Education, the National Institute of Education (the national teacher training institute), and the schools, supported alignment in implementation. China, with its strong and centralized education ministry, also had a rather straightforward, sequential rollout of its

curricular reforms. By contrast, in Chile's relatively small but decentralized education system, the Ministry of Education's implementation efforts were hampered by relatively limited authority over schools. In India, Mexico, and the United States, too, coherence was harder to achieve.

Cognitive Goals Continue to Dominate

c. The countries also differed in terms of the managerial theories that influenced their approaches. While some countries emphasized the measurement of student learning outcomes and the use of incentives to hold teachers and administrators accountable for student performance (carrots and sticks) others emphasized the development of skills and capacity among teachers and adults (professionalism). This dichotomy does not mean that education systems either tested students or provided professional development to teachers; all did a mix of both, but countries varied in the fundamental underlying approach to improvement. This distinction is most visible in the contrast between the United States, which emphasized accountability, and Singapore, which emphasized the development of professionalism.

d. In several countries, 21st century education strategies conflicted with those strategies oriented towards other educational goals. In Chile, for example, accountability initiatives, particularly assessments, focused on different skills than those highlighted in the new curriculum. There was no clear strategy for how to prioritize each of these policy objectives. In Chile, Mexico, and the United States, there were also disconnects between teacher preparation and the goals of the new curricula, while in Singapore teacher preparation was much more aligned to the new curriculum.

Challenges and Recommendations

There are bright spots of teaching and learning for the 21st century in all of these countries, and the study of programs that are doing well in this area will compose our forthcoming second book in this series.

However, the implementation of 21st century education remains a work in progress in most cases, at least at scale and in ways that benefit all students. The goals countries have set are important to reform, but they are not self-executing. While each country

faces unique challenges, we outline below five challenges and five recommendations we drew from studying all six countries, grouped into the three pillars of the Global Education Innovation Initiative: Convene, Research, and Educate.

Convene

Challenge #1: The need to promote public understanding about the content and competencies necessary for the 21st century.

Recommendation #1: Through convening of education stakeholders, including funders, policymakers, researchers, practitioners, parents and the general public, promote more robust discussions about the goals and purposes of education and the anticipated needs, challenges, and opportunities of the 21st century and beyond.

Such an increased public understanding can also strengthen the design and implementation of 21st century education. Our colleagues in Mexico found that such an understanding was lacking among education stakeholders, for example. In countries such as India and Singapore, where such discussions were facilitated, the outlined competencies are more comprehensive.

Research

Challenge #2: The need for an explicit systems theory about how to produce effective system-wide changes oriented to the broader goals of 21st century learning.

Recommendation #2: Conduct research that can sup-port the development of a systems-based approach to teaching and learning that can impart competencies relevant to life in the 21st century.

The weaknesses in implementation in many of the countries we studied can be seen as resulting from a lack of a systems-based approach to teaching and learning. While countries may set ambitious goals, implementation of-ten lags behind, and practice, policy, and preparation of teachers and organizations are rarely coordinated to sup-port the implementation of these goals.

Thus, there is a need for research that can support the development of a relevant systems theory. For example, research about existing systems that work and about how improvement science4 and Networked Improvement Communities5 can accelerate learning in schools, may address this challenge. Such a theory that would

address how the interplay of a wide range of factors in the education system, from assessment to communication between schools and communities, could help the undertaking of implementing broader, more ambitious education goals that are necessary for the 21st century.

Challenge #3: The need for an integrated develop-mental theory to guide 21st century education.

Recommendation #3: Develop an integrated theory of 21st century competency development that can strengthen the design of learning and teaching experiences.

The lack of such a theory poses a particular challenge with regard to developing intrapersonal and interpersonal competencies, which are newer curricular foci. While there is significant research on the development of individual traits, this is not sufficient for 21st century education's challenge of developing a range of traits simultaneously and in a manner that encourages students to make meaning of their educational experiences and see schools as relevant to their lives.

There also a need to further develop theories of how adults learn the competencies that support a 21st century pedagogy and collaborate to produce a coherent and integrated set of educational experiences for students across subjects and grades.

Challenge #4: The need to find new ways to organize educational systems and schools that achieve a fine balance between the need for centralization and the need for autonomy.

Recommendation #4: Leaders will need to pay attention to the governance structures of education, so that schools are the kind of organizations where intrinsically motivated people—students and teachers—engage in the kind of innovation, collaboration, and hard work that will be necessary to teach to a more ambitious set of competencies.

For example, setting clear standards and expectations— the expectation that the phrase "all students" means all when it comes to providing them the competencies for empowerment—are necessary. These standards need the supports that centralized efforts can provide, for example, in the form of funding, or opportunities to build capacity, or assessment of progress. But those efforts need also to be coupled with the autonomy for teachers and students that provides room for professionalism, voice,

and innovation where it most matters—in the classroom and in the school—and coupled as well with openness for rich and multiple forms of collaboration between schools, communities, and other organizations of civil society.

Educate

Challenge #5: The need to address the perceived tension between investing in and supporting effective practices aligned with the traditional literacies and supporting practices aligned with 21st century competencies, particularly in schools that perform very poorly in the traditional literacies.

Recommendation #5: Identify schools, programs, and practices that teach these 21st century competencies well, in a variety of contexts, to show that teaching traditional literacies and 21st century competencies are not mutually exclusive, and work to learn from, distill, and disseminate these practices and principles.

Some stakeholders in education argue that since schools cannot even get children to learn the basics, it is better to go back to those narrower sets of basic skills, and to hold teachers accountable to them, than it is to set higher aspirations for schools.

However, in all the countries examined in this book, there are models that demonstrate 21st century teach-ing and learning, albeit at a small scale. Better under aspirations of 21st century education require new thinking and new ways of doing standing these models can contribute to strengthening system-wide implementation. Thus, there is a need to highlight best practices and ways to increase teacher and organizational capacities, and find ways to not just scale but transfer them, while taking into consideration the different demands placed by different socio-economic, political, and other contexts in which schools operate.

Conclusion

The aspirations of 21st century education require new thinking and new ways of doing, and those require everyone involved, particularly the adults working in schools and those who support them, to learn new ways. Figuring out how best to support the learning of those new ways is perhaps the single most important next step in the global movement to educate all children to build the future.

Executive summary prepared by Connie K. Chung and Anastasia Aguiar and designed by Jonathan Seiden.

1   http://data.worldbank.org/

2   "Gross" enrollment includes students of all ages. In other words, it includes students whose age exceeds the official age group (e.g. repeaters). Thus, if there is late enrollment, early enrollment, or repetition, the total enrollment can exceed the population of the age group that officially corresponds to the level of education – leading to ratios greater than 100 percent. (https://datahelpdesk.worldbank.org/ knowledgebase/arti-cles/114955-how-can-gross-school-enrollment-ratios-be-over-100)

3   National Research Council. Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century. Washington, DC: The National Academies Press, 2012. doi:10.17226/13398

4   http://www.carnegiefoundation.org/our-ideas/

5   Bryk, Tony (2015). 2014 AERA Distinguished Lecture: Accelerating How We Learn to Improve. Educational Researcher, 44 (9), pp. 467–477.

Institutional Research & Policy Finding

The Future of Education and Skills
Education 2030

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Introduction

Schools are facing increasing demands to prepare students for rapid economic, environmental and social changes, for jobs that have not yet been created, for technologies that have not yet been invented, and to solve social problems that have not yet been anticipated. Education can equip learners with the agency, the competencies and the sense of purpose to shape their own lives and contribute to the lives of others. Children entering school in 2018 will be young adults in 2030. So, change is imminent.

The aim of OECD's Education 2030: The Future of Education and Skills project is to support countries to find answers to two far-reaching questions: "What knowledge, skills, attitudes and values will today's students need to shape and thrive their world in 2030?" and "How can instructional systems develop these knowledge, skills, attitudes and values effectively?"

Adapted from: https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

This OECD Education 2030 position paper considers the challenges that young people will face; suggests the importance of the concept of learner agency; proposes an overarching learning framework with transformative competencies; reviews the nature of the knowledge, skills, attitudes and values that young people will need; and ends with possible curriculum design principles. It encapsulates the key messages of the project so far.

Foreword

We are facing unprecedented challenges – social, economic and environmental – driven by accelerating globalisation and a faster rate of technological developments. At the same time, those forces are providing us with myriad new opportunities for human advancement. The future is uncertain and we cannot predict it; but we need to be open and ready for it. The children entering education in 2018 will be young adults in 2030. Schools can prepare them for jobs that have not yet been created, for technologies that have not yet been invented, to solve problems that have not yet been anticipated. It will be a shared responsibility to seize opportunities and find solutions.

To navigate through such uncertainty, students will need to develop curiosity, imagination, resilience and self-regulation; they will need to respect and appreciate the ideas, perspectives and values of others; and they will need to cope with failure and rejection, and to move forward in the face of adversity. Their motivation will be more than getting a good job and a high income; they will also need to care about the well-being of their friends and families, their communities and the planet.

Education can equip learners with agency and a sense of purpose, and the competencies they need, to shape their own lives and contribute to the lives of others. To find out how best to do so, the Organisation for Economic Co-operation and Development (OECD) has launched *The Future of Education and Skills 2030* project. The aim of the project is to help countries find answers to two far-reaching questions:
- **What** knowledge, skills, attitudes and values will today's students need to thrive and shape their world?
- **How** can instructional systems develop these knowledge, skills, attitudes and values effectively?

This position paper describes the first results from this work. The initial framework was reviewed, tested and validated in an iterative process involving a range of stakeholders from around the world. They ensured that the framework is relevant

across the globe, consistent with wider policies and can be implemented. We will finalise the framework by the end of 2018. In 2019, we will change gears and begin to explore the translation of the framework into pedagogy, assessment and the design of an instructional system.

Working with policy makers, academic experts, school networks, teachers, education leaders, students and social partners, the framework provides a space in which to exchange ideas, compare proven and promising practices, discover cutting-edge research and contribute to a new ecosystem of learning. If you'd like to join us, please get in touch.

Andreas Schleicher
Director for Education and Skills
OECD

OECD Learning Framework 2030
This OECD Learning Framework 2030 offers a vision and some underpinning principles for the future of education systems. It is about orientation, not prescription. The learning framework has been co-created for the OECD Education 2030 project by government representatives and a growing community of partners, including thought leaders, experts, school networks, school leaders, teachers, students and youth groups, parents, universities, local organisations and social partners. This is work in progress and we invite you to join us in developing future-ready education for all.

Education 2030: A Shared Vision

We are committed to helping every learner develop as a whole person, fulfil his or her potential and help shape a shared future built on the well-being of individuals, communities and the planet.

Children entering school in 2018 will need to abandon the notion that resources are limitless and are there to be exploited; they will need to value common prosperity, sustainability and well -being. They will need to be responsible and empowered, placing collaboration above division, and sustainability above short-term gain.

In the face of an increasingly volatile, uncertain, complex and ambiguous world, education can make the difference as to whether people embrace the challenges they are confronted with or whether they are defeated by them. And in an era characterised by a new explosion of scientific knowledge and a growing array of complex societal problems, it is appropriate that curricula should continue to evolve, perhaps in radical ways.

Need for new solutions in a rapidly changing world

Societies are changing rapidly and profoundly.

A first challenge is **environmental**: e.g.
- Climate change and the depletion of natural resources require urgent action and adaptation.

A second challenge is **economic**: e.g.
- Scientific knowledge is creating new opportunities and solutions that can enrich our lives, while at the same time fuelling disruptive waves of change in every sector. Unprecedented innovation in science and technology, especially in bio-technology and artificial intelligence, is raising fundamental questions about what it is to be human. It is time to create new economic, social and institutional models that pursue better lives for all.
- Financial interdependence at local, national and regional levels has created global value chains and a shared economy, but also pervasive uncertainty and exposure to economic risk and crises. Data is being created, used and shared on a vast scale, holding out the promise of expansion, growth and improved efficiency while posing new problems of cyber security and privacy protection.

A third challenge is **social**: e.g.
- As the global population continues to grow, migration, urbanisation and increasing social and cultural diversity are reshaping countries and communities.
- In large parts of the world, inequalities in living standards and life chances are widening, while conflict, instability and inertia, often intertwined with populist politics, are eroding trust and confidence in government itself. At the same time, the threats of war and terrorism are escalating.

These global trends are already affecting individual lives, and may do so for decades to come. They have triggered a global debate that matters to every country, and call for global and local solutions. The OECD Education 2030 contributes to the UN 2030 Global Goals for Sustainable Development (SDGs), aiming to ensure the sustainability of people, profit, planet and peace, through partnership.

Need for broader education goals: Individual and collective well-being

Unless steered with a purpose, the rapid advance of science and technology may widen inequities, exacerbate social fragmentation and accelerate resource depletion.

In the 21st century, that purpose has been increasingly defined in terms of well-being. But well-being involves more than access to material resources, such as income and wealth, jobs and earnings, and housing. It is also related to the quality of life, including health, civic engagement, social connections, education, security, life satisfaction and the environment. Equitable access to all of these underpins the concept of inclusive growth.

Education has a vital role to play in developing the knowledge, skills, attitudes and values that enable people to contribute to and benefit from an inclusive and sustainable future. Learning to form clear and purposeful goals, work with others with different perspectives, find untapped opportunities and identify multiple solutions to big problems will be essential in the coming years. Education needs to aim to do more than prepare young people for the world of work; it needs to equip students with the skills they need to become active, responsible and engaged citizens.

Learner agency: Navigating through a complex and uncertain world

Future-ready students need to exercise agency, in their own education and throughout life. Agency implies a sense of responsibility to participate in the world and, in so doing, to influence people, events and circumstances for the better. Agency requires the ability to frame a guiding purpose and identify actions to achieve a goal.

To help enable agency, educators must not only recognise learners' individuality, but also acknowledge the wider set of relationships – with their teachers, peers, families and communities – that influence their learning. A concept underlying the learning framework is "co -agency" – the interactive, mutually supportive relationships that

help learners to progress towards their valued goals. In this context, everyone should be considered a learner, not only students but also teachers, school managers, parents and communities.

Two factors, in particular, help learners enable agency. The first is a personalised learning environment that supports and motivates each student to nurture his or her passions, make connections between different learning experiences and opportunities, and design their own learning projects and processes in collaboration with others. The second is building a solid foundation: literacy and numeracy remain crucial. In the era of digital transformation and with the advent of big data, digital literacy and data literacy are becoming increasingly essential, as are physical health and mental well-being.

OECD Education 2030 stakeholders have co-developed a "learning compass" that shows how young people can navigate their lives and their world (Figure 1).

Fig 1: The OECD Learning Framework 2030: Work-in-progress
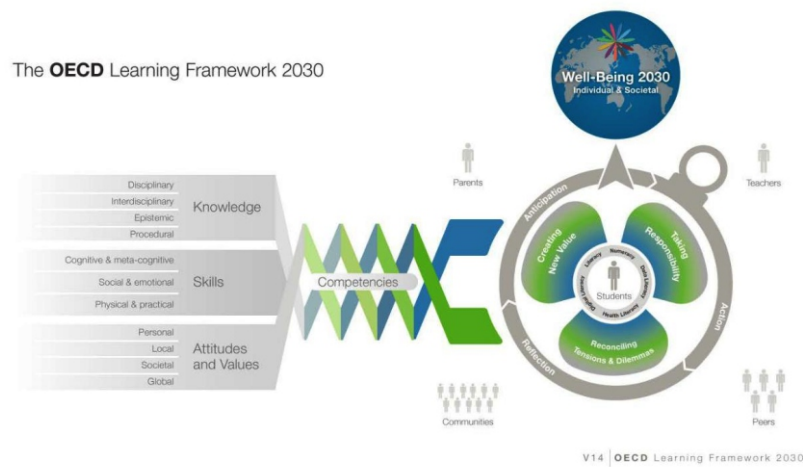
Need for a broad set of knowledge, skills, attitudes and values in action

Students who are best prepared for the future are change agents. They can have a positive impact on their surroundings, influence the future, understand others' intentions, actions and feelings, and anticipate the short and long-term consequences of what they do.

The concept of competency implies more than just the acquisition of knowledge and skills; it involves the mobilisation of knowledge, skills, attitudes and values to meet complex demands. Future-ready students will need both broad and specialised knowledge. Disciplinary knowledge will continue to be important, as the raw material from which new knowledge is developed, together with the capacity to think across the boundaries of disciplines and "connect the dots". Epistemic knowledge, or knowledge about the disciplines, such as knowing how to think like a mathematician, historian or scientist, will also be significant, enabling students to extend their disciplinary knowledge. Procedural knowledge is acquired by understanding how something is done or made – the series of steps or actions taken to accomplish a goal. Some procedural knowledge is domain-specific, some transferable across domains. It typically develops through practical problem-solving, such as through design thinking and systems thinking.

Students will need to apply their knowledge in unknown and evolving circumstances. For this, they will need a broad range of skills, including cognitive and meta-cognitive skills (e.g. critical thinking, creative thinking, learning to learn and self-regulation); social and emotional skills (e.g. empathy, self-efficacy and collaboration); and practical and physical skills (e.g. using new information and communication technology devices).

The use of this broader range of knowledge and skills will be mediated by attitudes and values (e.g. motivation, trust, respect for diversity and virtue). The attitudes and values can be observed at personal, local, societal and global levels. While human life is enriched by the diversity of values and attitudes arising from different cultural perspectives and personality traits, there are some human values (e.g. respect for life and human dignity, and respect for the environment, to name two) that cannot be compromised.

Competencies to transform our society and shape our future

If students are to play an active part in all dimensions of life, they will need to navigate through uncertainty, across a wide variety of contexts: in time (past, present, future), in social space (family, community, region, nation and world) and in digital space. They will also need to engage with the natural world, to appreciate its fragility, complexity and value.

Building on the *OECD Key Competencies* (the DeSeCo project: Definition and Selection of Competencies), the OECD Education 2030 project has identified three further categories of competencies, the "Transformative Competencies", that together address the growing need for young people to be innovative, responsible and aware:

- Creating new value
- Reconciling tensions and dilemmas
- Taking responsibility

Creating new value

New sources of growth are urgently needed to achieve stronger, more inclusive and more sustainable development. Innovation can offer vital solutions, at affordable cost, to economic, social and cultural dilemmas. Innovative economies are more productive, more resilient, more adaptable and better able to support higher living standards.

To prepare for 2030, people should be able to think creatively, develop new products and services, new jobs, new processes and methods, new ways of thinking and living, new enterprises, new sectors, new business models and new social models. Increasingly, innovation springs not from individuals thinking and working alone, but through co-operation and collaboration with others to draw on existing knowledge to create new knowledge. The constructs that underpin the competency include adaptability, creativity, curiosity and open-mindedness.

Reconciling tensions and dilemmas

In a world characterised by inequities, the imperative to reconcile diverse perspectives and interests, in local settings with sometimes global implications, will require young people to become adept at handling tensions, dilemmas and trade-offs, for example, balancing equity and freedom, autonomy and community, innovation and continuity, and efficiency and the democratic process. Striking a balance between competing demands will rarely lead to an either/or choice or even a single solution. Individuals will need to think in a more integrated way that avoids premature conclusions and recognises interconnections. In a world of interdependency and conflict, people will successfully secure their own well-being and that of their families and their communities only by developing the capacity to understand the needs and desires of others.

To be prepared for the future, individuals have to learn to think and act in a more integrated way, taking into account the interconnections and inter-relations between contradictory or incompatible ideas, logics and positions, from both short- and long-term perspectives. In other words, they have to learn to be systems thinkers.

Taking responsibility

The third transformative competency is a prerequisite of the other two. Dealing with novelty, change, diversity and ambiguity assumes that individuals can think for themselves and work with others. Equally, creativity and problem-solving require the capacity to consider the future consequences of one's actions, to evaluate risk and reward, and to accept accountability for the products of one's work. This suggests a sense of responsibility, and moral and intellectual maturity, with which a person can reflect upon and evaluate his or her actions in light of his or her experiences, and personal and societal goals, what they have been taught and told, and what is right or wrong. Acting ethically implies asking questions related to norms, values, meanings and limits, such as: What should I do? Was I right to do that? Where are the limits? Knowing the consequences of what I did, should I have done it? Central to this competency is the concept of self-regulation, which involves self-control, self-efficacy, responsibility, problem solving and adaptability. Advances in developmental neuroscience show that a second burst of brain plasticity takes place during adolescence, and that the brain regions and systems that are especially plastic are those implicated in the development of self-regulation. Adolescence can now be seen as a time not just of vulnerability but of opportunity for developing a sense of responsibility.

Design principles for moving toward an eco-systemic change

These transformative competencies are complex; each competency is intricately inter-related with the others. They are developmental in nature, and thus learnable.

The ability to develop competencies is itself something to be learned using a sequenced process of reflection, anticipation and action. Reflective practice is the ability to take a critical stance when deciding, choosing and acting, by stepping back from what is known or assumed and looking at a situation from other, different perspectives. Anticipation mobilises cognitive skills, such as analytical or critical thinking, to foresee what may be needed in the future or how actions taken today

might have consequences for the future. Both reflection and anticipation are precursors to responsible actions.

The OECD Learning Framework 2030 therefore encapsulates a complex concept: the mobilisation of knowledge, skills, attitudes and values through a process of reflection, anticipation and action, in order to develop the inter-related competencies needed to engage with the world.

To ensure that the new learning framework is actionable, the OECD Education 2030 stakeholders have worked together to translate the transformative competencies and other key concepts into a set of specific constructs (e.g. creativity, critical thinking, responsibility, resilience, collaboration) so that teachers and school leaders can better incorporate them into curricula. The constructs are currently under review (Annex 2).

They have also built a knowledge base for curriculum redesign. Curriculum change assumes that education is an ecosystem with many stakeholders. Students, teachers, school leaders, parents, national and local policy makers, academic experts, unions, and social and business partners have worked as one to develop this project. In its work across different countries, OECD Education 2030 has identified five common challenges.

1. Confronted with the needs and requests of parents, universities and employers, schools are dealing with curriculum overload. As a result, students often lack sufficient time to master key disciplinary concepts or, in the interests of a balanced life, to nurture friendships, to sleep and to exercise. It is time to shift the focus of our students from "more hours for learning" to "quality learning time".
2. Curricula reforms suffer from time lags between recognition, decision making, implementation and impact. The gap between the intent of the curriculum and learning outcome is generally too wide.
3. Content must be of high quality if students are to engage in learning and acquire deeper understanding.
4. Curricula should ensure equity while innovating; all students, not just a select few, must benefit from social, economic and technological changes.
5. Careful planning and alignment is critically important for effective implementation of reforms.

In response to these challenges, working group members and partners are co-creating "design principles" for changes in curricula and education systems that will be relevant in different countries over time.

Concept, content and topic design:

- **Student agency.** The curriculum should be designed around students to motivate them and recognise their prior knowledge, skills, attitudes and values.
- **Rigour.** Topics should be challenging and enable deep thinking and reflection.
- **Focus.** A relatively small number of topics should be introduced in each grade to ensure the depth and quality of students' learning. Topics may overlap in order to reinforce key concepts.
- **Coherence.** Topics should be sequenced to reflect the logic of the academic discipline or disciplines on which they draw, enabling progression from basic to more advanced concepts through stages and age levels.
- **Alignment.** The curriculum should be well-aligned with teaching and assessment practices. While the technologies to assess many of the desired outcomes do not yet exist, different assessment practices might be needed for different purposes. New assessment methods should be developed that value student outcomes and actions that cannot always be measured.
- **Transferability.** Higher priority should be given to knowledge, skills, attitudes and values that can be learned in one context and transferred to others.
- **Choice.** Students should be offered a diverse range of topic and project options, and the opportunity to suggest their own topics and projects, with the support to make well-informed choices.

Process design:

- **Teacher agency.** Teachers should be empowered to use their professional knowledge, skills and expertise to deliver the curriculum effectively.
- **Authenticity.** Learners should be able to link their learning experiences to the real world and have a sense of purpose in their learning. This requires interdisciplinary and collaborative learning alongside mastery of discipline-based knowledge.
- **Inter-relation.** Learners should be given opportunities to discover how a topic or concept can link and connect to other topics or concepts within and across disciplines, and with real life outside of school.

- **Flexibility.** The concept of "curriculum" should be developed from "predetermined and static" to "adaptable and dynamic". Schools and teachers should be able to update and align the curriculum to reflect evolving societal requirements as well as individual learning needs.
- **Engagement**. Teachers, students and other relevant stakeholders should be involved early in the development of the curriculum, to ensure their ownership for implementation.

Next steps

This paper summarises a global effort for education change. You are invited to add your voice and your support to its visions and ideas by joining the Working Group of the OECD Education 2030 project.

The group is collecting ideas and examples of good practice for making the learning framework actionable. They call on:
- National, regional and local governments to share their policy design and curriculum design experiences related to the learning framework
- Students, teachers, school leaders, and parents to share practices and experiences as concrete examples of using the OECD Learning Compass 2030
- Experts and researchers to help strengthen the links between evidence-based policy and practice, especially on the constructs of the framework
- Local communities, professional associations and industries, including representatives of teachers' unions and the business sector, to share practices of supporting student learning and creating appropriate learning environments
- International communities and organisations to contribute to the OECD Education 2030 dialogue in support of the UN Sustainable Development Goal 4.7 and other relevant initiatives.

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CHAPTER 1

Creative Teaching Approaches for Creative Thinking Skills and 5-E Learning Among Secondary School Science Students

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Introduction

Education is the bedrock of national development; an educated nation is a developed nation and vice versa. The level of education of any country determines the level of development of such country. An educated person is the one who has passed through a formal schooling, trained and certified in any chosen discipline. Such a person knows his duties, rights and roles in any society he/she finds himself/herself and contributes meaningfully to the development of such society. Formal teaching and learning takes place in a formal school setting. Education involves teaching and learning in a formal school setting. Effective learning depends solely on effective teaching but for teaching and learning to be effective, teachers and students must be creative and not stereotypical. Creative teaching will therefore bring about creative learning. A teacher cannot give what he/she does not have; it is when a teacher is creative that he/she will produce creative learners who have acquired creative skills. Teachers' success is a measure of his students' performance. Ali, Aliyu and Leo (2014) reiterated that every teacher should be equipped with skills of creativity. Creativity is needed in workplace and industries; only those who have these skills will be employed and stay on the job. The problem of unemployment is a critical problem in Nigeria, graduates roam about the street after schooling; they are jobless, few who are invited for job interview are not employed, why? Because they are unemployable, majority of these graduates cannot defend their

certificates, others can not apply what they have learnt in their various disciplines to real life situations; this may be attributed to their lack of creativity. It is therefore necessary to train students to be creative right from the secondary school level so that later in life they will be productive anywhere they find themselves. Hence, for creative thinking skills to be achieved by students, teachers have greater responsibilities to perform using appropriate teaching approaches. This justifies the need for this article. This discussion will focus on:

1. Concept of creative teaching.
2. Creative teaching Approaches.
3. 5-E Learning Approaches.
4. Creative Learning Skills.
5. Teacher's role in creative teaching approaches.
6. Students' role in creative teaching approaches.
7. Empirical researches on creative teaching
8. Conclusion

Concept of Creativity

Creative skill is one of the 21st century skills that are broad sets of knowledge, skills, work habit and character traits that are critical to success in the world of today. Creativity therefore means the ability to produce new things, which could be knowledge, ideas or /facts or to come up with new inventions. Creative thinking therefore means thinking in a new dimension, new way and, thinking outside the box; lateral thinking and thinking in a pattern that is not obvious. Creativity according to Ali, Aliyu and Leo (2014) is the consciousness of someone's original ideas that are novel, useful and meeting the needs of the people. Creative people have ability to solve problems, cope with challenges and thus be productive in all areas of life. Creativity can be natural, some people are born to be creative (come from within), on the other hand it can be acquired though strengthened with practice (learn and taught by the teacher to acquire skills). For creativity to be strengthened with practice among secondary school students, teachers need different teaching approaches. Creativity is applicable to all spheres of disciplines. In line with this dimension is the submission of Cremin and barnes (2015) that the 21st century is a world dominated by technology innovation and rapid change, hence, it is imperative for teachers and school leaders to adapt to the changing world and see the development of creativity as an essential part of their job. Also, Robinson (2001; 2009) and Craft (2011) submitted that creativity is the key resources needed for people's imaginative thoughts and innovative power in a knowledge driven economy society such as Nigeria. The researchers therefore also

reiterated that as an evidence of this importance, creativity is given a priority in the curriculum of early years to allow children to develop creativity and problem solving skills. Cooper (2013) in line with other researchers on creative teaching re-echoed that girls generally lost interest in science and its related disciplines and that recent researchers have focused on the use of creative teaching to attract girls to STEM academics and career fields. This article will focus all discussion on creativity to science teaching in the 21st century. What then is creative teaching?

Creative Teaching

There are diverse views of creative teaching. Herbert (2010) sees creative teaching as the imaginative approach to make learners more interested and effective students, stimulating their curiosity and imagination. The researcher added that this can be achieved through the teacher giving task that is activity based; hands on and minds on, thereby, making students to explore the world around them. Cooper (2013) submitted that creative teaching is that approach that develops students' creativity and cannot be left by chance. Cremini & Arthur (2014) reported that creative teaching is the approach that develops high emotional stability in students. In another dimension, Vasudevan (2014) defines creative teaching as teaching creatively and teaching for creativity. The researcher explains teaching creatively as teacher using different approaches to make learning to be facilitating, interesting, motivating attracting and thrilling. While teaching for creativity involves teacher using materials that will develop student's creative thinking and behaviours. From these entire views, one can say that creative teaching is the different activity based approaches used by teachers for effective learning outcomes in the classroom. Some of which are as follows:

Creative Teaching Approaches

Cooperative learning, 5-E learning, problem solving, guided discovery, inquiry, etc. are some few examples of creative teaching out of which cooperative learning and 5-E learning will be extensively discussed.

Cooperative Learning

Cooperative learning is a highly successful teaching strategy in which students in small heterogeneous groups (different levels of ability, gender, race or religion) of 4 or 5, work together to accomplish an assigned task collectively using varieties of learning activities to improve their understanding of a subject within the context of this article the subject is science.

Advantages of Cooperative Learning

1. It makes each of the students feel that he or she is an important member of the class.
2. Each member of the group is responsible for group decision on assigned tasks or of what is to be learnt.
3. Each member of the group offers a helping hand to enable other group members learn or accomplish a group task.
4. Students learn from each other and gain interpersonal and social skills.
5. It improves achievement of students in each subject.
6. It improves students' self-esteem.
7. It improves students' acquisition of positive social skills.
8. It improves classroom attendance.
9. It develops and improves self confidence in students.
10. It develops students' interest for school and class participation.
11. It motivates students to learn.
12. It eliminates biases and discrimination due to race
13. It develops team spirit in students.

Phases of a Cooperative Learning Activity

1. Group formation
2. Work organisation/ role assignment
3. Getting to know each other
4. Group identity
5. Work phase
6. Evaluation and reflection

Group Formation

This can be done with the use of cardboard, pictures, birthday dates, months, colour etc for student grouping into group categories.

For face to face interaction, the maximum number of students in a group should be four (4)
Small spacial distance
Intensive communication
Not too loud

Work Organisation/Role Assignment
Roles are assigned to every member of the group
Leader
Material collector
Recorder
Time keeper

Getting to know each other
Members of each group introduce themselves to one another.
Each partner introduces the person to other members of the group.

Group Identity for Example in Teaching a Topic: Energy
Each group forms its identity by joint decision on members of the group. Each group identity could be Potential energy, Kinetic Energy, Electromagnetic energy, sound energy, light energy etc depending on the number of groups available

Work Phase the Teacher Gives Out Some Questions on the Topic (Energy) for Students to Think Pair and Share
Think-Pair – Share
Think individually
 Present your ideas to pair
Share with your classmates

Evaluation and Reflection
The use of five fingers
The Thumb   Represents what I like about today's lesson
Index thumb: what stood out for me; what you understand very well
Middle finger Constructive criticism: areas I want more explanation/ improvement
Ring finger: what I want to commit doing
Little finger: what I want to improve upon
The above can be used to teach any topic in science

Five E- Learning Approaches
The five E-Learning approaches is another example of creative teaching approach that can be used in the classroom for the achievement of creative learning, they are:
1. Engage
2. Explore
3. Explain

4. Elaborate
5. Evaluate

1. **Engage**: Teacher designs different activities on the topic of the lesson to engage the science students. The activities could require students to provide answers to sets of questions individually or collectively in a group or require students to discuss his /her opinion on a certain topic or concept. Engaging the students will foster the development of students 'interest in the topic.
2. **Explore:** Students can actively explore their immediate environment for new concepts through concrete learning experiences. They may be allowed to perform simple experiments, make observations, report what they observe and communicate their results.
3. **Explain:** Students are allowed to explain their observations, ask questions for further clarifications. They can also discuss pertinent issues for more clarifications.
4. **Elaborate:** Students use what they learnt in new situations; this gives deeper understanding of the concepts.
5. **Evaluate:** Students are allowed to assess themselves (self and peer assessment) using some guided format provided by the teacher.

1. What have I learnt today?
2. What interests me most?
3. What did I not understand?
4. What do I need to improve upon?
5. What area do I need more practice?
6. What area do I understand most?
7. What area is difficult for me?
8. What area did I not like?

Positive Impact of 5-E Learning Approach
1. It leads to the acquisition of scientific concept rather than the traditional instruction
2. It significantly increases learning and retention
3. It positively increases students' academic achievement
4. It provides students with unique experience through active participations

Creative Learning Skills

These are the skills acquired by learners after their exposure to creative teaching approaches and are called creative learning skills. These skills are skills for life, learning and work. They are higher order and creativity skills which are needed by students in work place. The skills that can be developed in all subjects are:

1. Personal skill
2. Character building skill
3. Problem solving skill
4. Time management skill
5. Stress management skill
6. Communication skills
7. Imagination skills
8. Curiosity skill
9. Open mindedness skill
10. Emotional Intelligence Skills

Personal Skills: These involve staying well in body and mind; setting personal goals and working hard to achieving them. Ability to recognise personal strength and weaknesses, remove barriers to learning, and encourage the use of self-motivation.

Character Building Skills: This includes character and virtues, emotional intelligence, managing emotions, having self-control, good temper, friendliness, compassion, building self confidence and self-esteem. Manage one's emotion, and control anger, and having good human relationship.

Problem Solving Skills: This involves one's ability to identify a problem, defining the problem, developing methods of solving and giving solutions to the problem.

Time Management Skills: This is the ability to get things done on time, the ability to use time effectively through the organisation of one's time for maximum benefit so has to be motivated and develop self-confidence.

Stress Management: Stress is a common occurrence in daily activities; everyone is stressed up with numerous activities by wanting to do so many things at the same time. It is therefore very necessary to balance work, family, money, and health. Stress brings ill-health. This must be avoided through creating time to rest, relax, eat good food, feel better about one's self, enjoy life and gain confidence.

Communication Skills: This is the ability to speak up to people effectively with the use of words organised in an orderly and logical form for the audience or receiver to understand the intended information and message. Communication strengthens relation and is needed in the work place.

Imagination Skills: This is the ability to bring up new ideas, be innovative, exploring, combining and refining ideas, bringing out the best out of multiple available options and alternatives.

Curiosity Skills: This is the ability to be inquisitive by asking effective questions, finding out information, seeking answers to questions and wanting to find out things in order to get new and current information.

Open Mindedness Skills: This is the ability to operate open door policy, not hiding information, being able to think along other people's point of view, being flexible and not rigid, coping well with uncertainty and being able to see a range of possible outcomes.

Teacher's Role in Creative Teaching
1. Design classroom activities for students.
2. Manage students in meaningful classroom activities.
3. Facilitate students learning in classroom activities.
4. Supervise students' activities in the classroom.

Students Role in Creative Teaching
1. Carry out classroom activities designed for them by the teacher.
2. Participate actively in classroom activities.
3. Display a high level of readiness and commitment to learn.
4. Constant participation to acquire creative skills and use them always.
5. Contribute in team work, sink and swim together.
6. Work individually and in a group actively.

Empirical Studies on Creative Teaching
There are numerous studies on creative teaching few of which are as follows;
Vasudevan (2013) investigated the influence of teachers' creativity, attitude and commitment on students' proficiency of the English language. A sample of 310 teachers was surveyed in Malaysia. The results showed that teacher's creativity

positively and significantly influence students 'proficiency in English Language. Also, Chee, Yahaya. Ibrahim and Hazan (2016) investigated the relationship between creative teacher and their creativity in teaching .The study was conducted using 70 graduate teachers from five sub urban secondary schools in Malaysia.Two instrument Khatena- Tollerance Creative Performance Inventory (KTCPI) and Creative Teaching Inventory (CTI). Results showed no correlation between creativity tendency in teacher and their creativity in teaching students. Also, no significant difference existed between male and female teachers in their creative teaching. Hence, any teacher can carry out creativity teaching and that many creative teaching can be enhanced by both male and female teachers. Still along the same way, Ali Aliyu and Lee (2014) conducted an empirical study on the impact of creative teaching on science pupils from primary three in Federal Capital Territory (FCT) Abuja Nigeria. The results showed that creative teaching has positive effect and were effective, it also develop a favourable attitude of students towards science.

Davies, Jindal-Snap, Collier, Didby, Hat and Howe (2013) worked on the systematic review of creative learning environment in education using 210 educational researches. The findings of the review showed that flexible use of space and time, as well as availability of instructional material, and working outside the classroom with degree of learner's autonomy ,respectful relationship between learner's and teacher ,peer collaboration and partnership with external agencies. Also, Cooper (2013) conducted a study using a sample of 915 on a survey to find out the influence of problem solving and creativity on girls interest in Science Technology Education and Mathematics (STEM) subjects. The results showed that girls' interest in problem solving was a positive predictor of al STEM subject areas and creativity and design was a positive predictor for interest in computer and Engineering but a negative predictor for interest in science was obtained.

Conclusion
Creative Skills are essential skills for employability and for productivity; they should be developed in students from schools in all subjects. This will make them to be useful, functional and productive in life and be employable.

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CHAPTER **2**

The 21st Century Teacher and Act of Teaching

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Specific Objectives
Ability to know:
1. Who a teacher is
2. The twenty first century teacher
3. Features of twenty first century teachers and education
4. Characteristics of twenty first century teaching
5. Method of twenty first century teaching
6. Identify the physiological, psychological and special needs of a 21st century learner

A teacher is a person whose students acquire knowledge, competence or virtue. Informally the role of a teacher may be taken on by anyone. A good teacher is someone who plays a role as children's mate in learning and he/she could be someone who thinks and acts at the best of his/her children's view and growth. He/she is one who challenges his/her children to be all that they can be. Everyone in the world is a teacher in a sense. A twenty first century teacher is one who optimizes the current information, equipment, and facilities in science and technology obtainable. It means utilizing everything that is important in today's world so that students will be able to cope in the continuous development of today's economy and the world in general as well as having the ability to guide students and prepare them for the future.

Features of 21st Century Education

1. The 21st century is based on discovery and finding out new things.
2. They make use of electronic devices like computers, phones and other devices that aid in proper research, communication and collaboration, making them learn how to work together and develop problem solving skills.
3. They are all about the students also being engaged in extracurricular activities like embarking on field trips.
4. They believe that students should be able to have other opinions of a particular topic that is generally acceptable thereby bringing in or modifying already stated theories and laws.

Features of the 21st Century Teachers

1. Learner-centered
2. Research driven
3. Active learning
4. Project based

The 21st century teachers try hard to inculcate a modus operandi for learning by using the **4C's** and the **3R's** which are

Critical Thinking	**R**eading
Creativity	W**r**iting
Collaboration	**A**rithemetic
Communiction	

Methods of Teaching in the 21st Century

i. Project Based Learning
ii. Flipped Classroom
iii. Design Thinking
iv. Thinking Based Learning
v. Problem Based Learning
vi. Cooperative Learning

We will be dealing majorly on

1. Project Based Learning
2. Thinking Based Learning
3. Problem Based Learning
4. Cooperative Learning

Project Based Learning

Project Based Learning is an innovative approach to learning that teaches a multitude of strategies critical for success in the Twenty-first century. Students drive their own learning through inquiry, as well as work collaboratively to research and create projects that reflect their knowledge. The research on Project Based Learning consistently showed that student's performance increased, student motivation and engagement, improved teacher/student interaction. Project Based learning help students develop skills for living in a knowledge based highly technological society. With this combination of skills, students become directors and managers of their learning process, guided and mentored by a skilled teacher. Project Based Learning connects students to the real world. It prepares students to accept and meet challenges in the real world, mirroring what professionals do every day. It also improves students attitudes towards education, thanks to its ability to keep students engaged.

Thinking Based Learning

Thinking Based Learning is a method of teaching and learning where the teaching of a specific thinking skill is infused into the teaching of content or subject matter. This is all about contextualization, analysis, relation, argument and many others. It is in other words the conversion of information into knowledge. This is the goal of thinking based learning, developing skills beyond memorization and in doing so, developing effective thinking on the part of the students. The Thinking Based learning is mostly about assimilating on already gotten information and being able to think out a strategy on solving a particular problem. Problem solving skills cannot be practiced without being able to think out a solution with those skills.

Problem Based Learning

This is an educational method that provides students with an authentic learning opposition with a focus on teaching through real life situations and solving real world problems. Through the problem solving process in problem based learning, students not only gain content knowledge but also develop their 21st century skills. It is a student-centered pedagogy in which students learn about a subject through the experience of solving open ended problems found in trigger materials. This process allows for learners to develop skills used for their future practice. The problem solving skills are

1. Active learning
2. Analysis
3. Research

4. Creativity
5. Communication

Examples of problem based learning are
1. Working teams
2. Oral and written communications
3. Critical thinking and analysis and many others

Problem Based Learning comes in steps. The 7 key steps in Problem Based Learning are
1. Identify the issue at hand
2. Understand everyone's interest
3. List possible solutions(options)
4. Evaluation of the options
5. Select an option or options
6. Document the agreement
7. Agree on monitoring and evaluation

Cooperative Learning
This involves working in groups which improves the involvement and acquisition of knowledge of students. The final goal is always group-oriented and will be achieved if each of the members successfully perform their tasks. It is an educational approach which aims to organize classroom activities into academic and social learning experience. There is much more to cooperative learning than merely arranging students in groups and it has been described, **"**Structuring Positive Interdependence.**"**

The 5 basic elements of cooperative learning are
1. Positive interdependence
2. Individual and group accountability
3. Face-to-face promotive interaction
4. Group processing
5. Interpersonal and small group skills.

Physiological, Psychological and Special Needs of 21st Century Learners
Needs are general wants or desires that children must have right from birth to be physically, emotionally and mentally healthy. Children in a consistent, nurturing and

loving manner. Mothers, teachers and other caregivers should provide a loving, stimulating and safe environment so that children can develop into healthy and secure young people.

Physiological needs: these are needs related to physical survival and existence. Physiological needs must be met before satisfying the psychological needs. They include the following needs:

a. **The need for food:** children like other human beings need to be well fed in order to survive. Nutritious foods in reasonable proportions promote growth and development of children. The foods that people eat as children greatly determine their likes as adults. Mother and caregivers should help the child develop healthy eating habits by offering a balanced diet and varied diet adequate in essential nutrients that are appropriate to child's developmental needs. Children have small stomachs, as such small frequent balanced meal are necessary.

b. **The need for clothes:** children need clothes to protect them against natural and environmental hazards example excessive cold and heat. They also need clothes for adornment to enable them look attractive. In hot weather, children need light absorbent clothes made from cotton while in cold weather, they need to wear warm clothes like woolens. Durable fabrics and simple styles are needed by children to withstand frequent washing, careless and rough treatments frequent to their clothes.

c. **The need for shelter:** children like adults need to have a place to call a home a place to rest during the day and sleep at night. They need protection from weather elements, calamites and wild animals.

d. **The need for sleep and rest:** children need more sleep than adults. Young require as much as 12 hours of sleep at night and naps during the day. Parents should be educated on the importance of sleep and rest in the development of children. Adequate time and materials for sleep and rest should be given to children while siesta schedule should be strictly enforced, caregivers and teachers of pre-school children should make provision for rest in the school/daycare centers. Classes of older children should be made interesting to prevent boredom, which could to sleep in class.

e. **The need for activity:** children need a lot of activities. Most activities of children are in the form of play and exercises. Some of these activities are educative while others are useful for muscles and motor skill development.

Parents and teachers should provide supportive and safe environment for children's activities. They should encourage enormous enthusiasm by which children's activities are undertaken in order to build competence and allow them to fully assimilate their skill.

Psychological Needs : Children's psychological needs are associated with socio-cultural environment of the child. They are not linked with the survival of the child, yet deprivation may lead to undesirable behaviour and maladjustment to the environment. Psychological needs are experienced as emotional states and are more difficult to identify and measure than physiological needs. These needs grow as the child grows and include the following:-

   a.   The need for love and affection: Every human being human being irrespective of age has the desire to love and to be loved. Children need love and affection of their parents, siblings and family members at home and of friends and teachers in school. Hugging, kissing/touching and playing with the child express these. Good experiences with loving adults in life help children develop love and trust in others. Children often attribute constant nagging/screaming and beating as signs of hatred. Glusson, 1999 suggest some techniques caregivers use to promote positive feelings of love and affection as:

   a.   Listening attentively to what children say
   b.   Praising children's efforts
   c.   Quickly comforting children who are upset
   d.   Accepting children's fears and concerns as real and deserving attention.
   e.   Giving a hug or a pat on the head or shoulder to show affection

   b.   The need for achievement: children need to feel that they have achieved something. Achievement goes with mastery-full command of a skill or a subject matter. Example a child being able to put on his clothes/ the ability to rebuild an engine after dismantling it or being able to perform a household task. These allows the child to explore new courses of action without fearing loss of love, respect and belonging. Parents/siblings and teachers should avoid overcritism as it makes a child feel guilty and ashamed.

   c.   The need for self-esteem: in early life, the need for self-esteem is met by approval from others. A child needs to feel good about himself and to believe that others perceive him favorably. The love and admiration of parents, teachers and friends help children build self-confidence,m thus feeling good about themselves. parents, teachers and other caregivers should play a role in boosting children's self-esteem by positive reinforcement and motivation.

    c.   The need for security: children need to feel secure and safe from harm both at home and in school. They do not only require security but also emotional, social and economic security for their well- being. When the physiological needs of children are met with love, care and reassurance, they grow to be more secure with the trust that they will be fed, kept clean and warm.

Parents, teachers and other caregivers have the responsibility for satisfying the safety needs of the children at all times as children fail to build a sense of security when their care is not consistent. Example, they cannot feel secure if they are fed promptly one day and made to cry for food the next day. For physical security parents should be vigilant and monitor the activities of the children. Harmful objects and materials should be kept out of their reach.

Special Needs
Children with special needs are those born with or who acquire conditions that place them outside the typical range of development for their age. The term special needs include many conditions that may not be noticeable. They might have developmental delay, making them accomplish tasks in any of the developmental areas at a considerable later age than their peers. Other may have an impairment indicating that development is in some way different, not just slower from that of most children. Children with special needs come under two categories, Children who are disabled and children who are gifted.

Conclusively, the twenty first century act of teaching and learning, features, methods and skills cut across ordinary classroom learning, but carries along whom the child is and what he wants to be through building the physiological and psychological resilience of the child, which has really improved the teaching and learning process basically with the use of technology and sciences. It has also encouraged students to be involved in independent research, as well as encouraging global collaboration, thereby bringing the entire globe as a family in terms of education.

CHAPTER 3

COVID-19 Pandemic and its Effects on Elementary Education: Why Nigerian Schools need to Adopt E-Learning

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Introduction

The outbreak and experience of Corona Virus Disease, otherwise known as COVID-19, has left a significant impact in the world. Between February and March, 2020, the world has come to a halt. No more travels. No more schools. No more conferences. No more sport tournaments. No more churches. No more mosques. People confined to their homes. The phrase 'social distancing' has become a popular song in the lips of people all over the world. This reality took most of the world by surprise yet it has given us a glimpse into how easily education could be disrupted and what alternatives must be put in place.

This pandemic leaves so much to be desired. It has completely altered lifestyle and the economies of countries. While the world is looking for possible cure for the pandemic, various sectors of the economy are concerned with how to manage the impact of the pandemic and chart a new course. The education sector is adversely affected by the pandemic as schools are shut down but learning must continue, especially at the elementary level. To move forward, developed countries have adopted e-learning as a means of keeping in touch with their pupils/students to learn. Although this has its challenges, e-learning is the most suitable available option to be adopted in schools in the face of recent realities. The aim of this paper is to examine the effect of COVID-19

pandemic on elementary education. The paper further examines why Nigerian schools should adopt e-learning.

The paper relies solely on secondary data. Secondary data refers to data collected by other researchers for the purpose of their own primary research (Haradhan, 2017). Specifically, this work has made reference to published data sourced from peer reviewed journals, reports by government agencies, as well as relevant websites. Being that education and e-learning are not new concepts, there was a lot of information available to be collected, filtered and linked with this study.

Conceptual Clarification
COVID-19
As earlier said, COVID-19 (Corona Virus Disease) took most of the world by surprise. Very few countries were ready for a total lockdown. First observed in Wuhan, China, the virus that causes COVID-19 is a novel corona virus. It is an acute respiratory disease that spreads from person to person through contact with droplets when one coughs, sneezes and speaks. Also through touching a surface or an object that has the virus and thereafter taking the hands to the eyes, nose and mouth (Nigerian Centre for Disease Control, 2020). As of 19th April, 2020, the number of confirmed COVID-19 cases are 2,241,359 while the number of deaths are put at about 152,551(World Health Organisation, 2020). It was declared a pandemic by the World Health Organisation (WHO) on the 11th of March, 2020(Medical News Today, 2020) meaning it has spread across several countries and affects a 'significant' number of people globally.

The nature of transmission of this disease is such that people cannot gather; even a group of ten people could prove fatal. Naturally, schools had to be shut down to avoid contact and spread of this disease. In several countries, the school term or year could not be completed. No one knows for sure how long the pandemic will last therefore no one knows for sure when the doors of schools will be reopen. This pandemic has revealed the lapses in our system of education as well as the crucial need for e-learning.

E-learning
E-learning stands for electronic learning. It could simply be seen as the use of the internet and other relevant technologies to create and assemble learning resources, instruct learners and oversee courses in an organisation. However, there is no common definition for the term. Most definitions are tailored towards the interest or specialization of the researcher (Akorful & Abaidoo, 2014) which finding an agreed

upon definition is an effort in futility. That being said Oblinger and Hawkins (2005) contend that e-learning encompasses offering fully online classes to adopting technologies in classrooms. It has also been explained to mean 'all forms of technology enhanced learning' (Francis, 2014). There have been attempts to coin an inclusive definition that would adequately cater to the scientific community and other stakeholders in this field and the following definition was coined: E-learning is an approach to teaching and learning, representing all or part of the educational model applied, that is based on the use of electronic media and devices as tools for improving access to training, communication and interaction and that facilitates the adoption of new ways of understanding and developing learning(Sangrà, Vlachopoulos, & Cabrera, 2012). for the future.

Review of Literature

The interest of researchers on the subject matter of e-learning has piqued in the past two decades though more often than not e-learning is used in the context of distance studies and higher learning. Goyal describes e-learning as the future of education because not only do students have access to course contents all year round, the environmental factors such as less paperwork would mean less cutting of trees in the long run (Goyal, 2012). Furthermore, Goyal draws our attention to the health benefits of e-learning: students will no longer be subjected to carrying around heavy school bags.

Ajadi et al stress on the 'convergence of internet and learning' or internet enabled learning (Ajadi, Salawu, & Adeoye, 2008). Also, they hinge on the flexibility of not necessarily having to be connected to the internet at all times since there are offline resources which could facilitate learning such as: CD ROMS, video tapes and televisions. It is important to note here that e-learning to these authors encompass much more than being connected to the internet. They imply that the mere use of technological advancements to teach or facilitate learning could be categorised as e-learning. Using Nigeria as their case study, the authors point out the most common form of e-learning in Nigeria is through the use of CD-ROMS which enables learners to playback the lesson when they please. However, reliance on CD-ROMS has its own shortcomings, one of which is the ICT centres never have enough computers to cater to the population of learners. Also, other components of e-learning are duly ignored.

Some researchers have drawn a distinction between computer based learning and internet based learning (Akorful & Abaidoo, 2014). In computer based learning, the

hardware and software components of computers are involved in learning. Mostly information is stored and retrieved to aid the management of education. Internet learning on the other hand makes course content available on the internet, teachers may not need to instruct as the internet provides the needful directions and instructions.

Francis reveals that many third world countries have not 'accepted' e-learning (Francis, 2014) in comparison with the western world. There have been hindrances to this development which come in the form of obstacles which individuals and companies must overcome. It is noted that many institutions cannot reach their e-learning goals because they have relied on each individual (teacher, instructor) to decide how they want to implement e-learning in their classroom or faculty thereby leading to 'a patchwork' of solutions which are not even compatible.

So much is involved in the implementation of e-learning. Technology, content and staff are the three key variables that could pose a hindrance to the successful implementation of e-learning (Zabadi & Dammas, 2016). They conclude that nations should develop minimum standards for e-learning. Institutions also need a clear vision of e-learning objectives as well as risks involved for that institution before implementing e-learning. A study carried out in Malaysia showed that using technology in general to aid learning proved effective and fulfilling (Ghavifekr & Wan Athirah, 2015), this approach allows students to be better organised and they can work from home as long as deadlines are met. Adaptive and collaborative learning are fostered through the use of e-learning and its platforms, more so, the role of the instructor under e-learning is transformed from that of a distributor of content to a facilitator of learning.

There is another side to e-learning. Some researchers have warned about fully embracing these technologies. There is the obvious risk of digital addiction (Rugai & Hamilton- Ekeke, 2016) in which the virtual world becomes an alternative to real life interactions and communication. They warn that digital addiction is as real as other addictions such as alcohol, gambling and drug addictions to name a few. Adequate restraints and precautions are necessary if technology is to be used in learning. Similarly, it has been argued that hasty conclusions should not be adopted yet, not without asking the proper questions (Oblinger & Hawkins , 2006). Technology on its own does not transform learning; rather using technology to boost motivation is what makes the real difference.

Several other issues and challenges associated with e-learning have been pointed out. There are technological challenges which border on the learning community and their technological requirement; development of new knowledge apparatus for e-learning (Rana, Rajiv, & Lal, 2014). They also note the patterns and innovations in technology bloom at an ever increasing rate, there is also a massive growth of knowledge and availability of information and the demand for universal quality education has increased more than ever.

Effects of COVID-19 on Elementary Schools in Nigeria
The COVID-19 pandemic has left many nations of the world in shambles and Nigeria is no exception. It is safe to say that most countries were not prepared for the rude awakening ushered in by this pandemic and very few countries have been able to respond in a way that minimises the impact on all sectors of the society. The education sector is one of many sectors to have been hit the hardest by COVID-19.

Social distancing has been branded as the best way to prevent contracting and spreading this viral disease, as a result, places of gathering such as schools have been asked to shut down indefinitely. Schools all over the world have opted for e-learning as a way of keeping up with their students and ensuring that the students do not miss out on the curriculum goals and objectives (Olabisi, 2020). As of March 26, 2020, the federal government asked schools to shutdown nationwide (Azeezat, Coronavirus: Nigerian govt orders closure of schools nationwide, 2020), for many schools, the work for academic term had not be completed and students were yet to write termly examinations. Three weeks later, it was announced by the ministry of education that schools are not permitted to resume avoiding further spread of the virus (Azeezat, Coronavirus: No reopening of schools yet — FG, 2020). What does this mean for students, parents and even teachers in Nigeria?

Implications
The effects of COVID-19 on elementary schools in Nigeria have several implications. Common among them are,
1. Disruption of the educational system/sector: as earlier explained, this pandemic took the world off guard (hundrED.org, 2020). Many schools had not finalised for the term/year. The pandemic disrupted an ongoing busy school system and structure.
2. No Salaries for teachers: teachers in private elementary schools may not receive wages and salaries because of the lockdown. As long as there is no incoming cash flow, wages and salaries cannot be paid.

3. Increased home learning/home schooling: A number of parents/families have resorted to teaching their children at home. Home schooling has been around for a long time though not the norm in certain parts of the world, it is being embraced by many due to this pandemic (Mohan, 2020). While many parents are able to successfully home school their children, some insist that it does not work for them.

4. Online learning: developed countries have turned to this since the lockdown began. Most third world countries have not embraced this fully (Olabisi, 2020). Some privileged schools have done this but they represent an insignificant percentage of the population. Due to poverty and illiteracy this system will cause a lot of children to be left behind.

Why more Nigerian Schools need to Embrace E-learning

Information and communication technology (ICT) has influenced the world. The world is regarded as a global village and technology leads the path of creativity and innovation. The importance of e-learning in Nigerian schools cannot be overstressed, even with the outbreak of the pandemic. However in the face of recent realities, e-learning is significant in stabilizing the education sector, especially at the elementary level. Some of the reasons why Nigerian schools need to embrace e-learning are advanced below,

1. **Learning is not limited to a physical space**: Perhaps, this is the biggest lesson the COVID-19 pandemic will teach the global education community. For so long, educators and students have been confined to a physical space, while we may never get over the traditional face to face learning, a blended system of learning is the way forward and will serve us in moments of crises.

2. **Innovative and Modern teaching techniques**: a study in Greensprings school, Lagos concluded that most of the teachers in that school thought that e-learning makes teaching highly efficient and effective, helps teachers improve on their computer skills, allows the students put into practice what they have been taught, students and teachers share responsibility for teaching and learning (Tunmibi, Aregbesola, Adejobi, & Ibrahim, 2015). It provides a platform for innovative thinking, creativity and exploration (Olojo, Adewumi, & Ajisola, 2012) thereby enhancing a creative and innovative classroom atmosphere.

3. **Increased family interactions**: it has been argued that e-learning portals that require parents to log in and track the progress of their children, communicate with staff and discuss with their children actually provide an

avenue for family bonding (Olojo, Adewumi, & Ajisola, 2012). With the ongoing pandemic, both parents and children are on lockdown, this presents the ideal opportunity to showcase this advantage of e-learning.

4. **Indivualized and differentiated learning**: e-learning can cater to disadvantaged children and children with different learning styles (Olojo, Adewumi, & Ajisola, 2012). There are several learning management systems (LMS) that follow the pace of children.

5. **E-learning motivates children**: Through the use of the internet and computers, children who get bored with traditional classroom sceneries could be motivated. Contemporary coding curriculum such as coding gives children the opportunity to explore and teaches them problem solving.

Conclusion

The paper examined the effect of COVID-19 pandemic and its effect on elementary education. With the overwhelming importance of education in the development of any country, the paper underscores the importance why Nigerian schools should adopt e-learning, especially in the face of recent lock down which adversely affects the educational system. In this digital age, the education sector must keep up with current technological trends in order to meet up with the demands of the times. COVID-19 caught us unawares and while we do not pray for another pandemic, we need to build solid systems that can serve us adequately when crises hit.

Schools in Nigeria that had already adopted e-learning (though they are few) are not as confused and anxious as schools that had no plan at all. The benefits of e-learning are not limited to the children alone. Parents and teachers also stand to gain innovative ideas, exposure to other people from various places as well as watching children learn in a manner that excites them. The advantages of e-learning clearly outweigh whatever disadvantages may exist.

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CHAPTER 4

Nature of Modern Technology in Enhancing the Effectiveness of Modern Education in the 21st Century

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Abstract

The purpose of this study was to investigate the possibilities of modern technology in transforming 21st century learning skills in schools. The study sought to fulfill the following objectives: determine whether education system is ICT enabled for integration in schools, determine whether ICTs integration enhances students' development of 21st century learning skills, examine whether the curriculum has incorporated ICT assessments and whether it addresses 21st century skills and to examine whether teachers do adopt new pedagogies that embrace 21st century skills. The findings, therefore, revealed that, the possible actions Taken by the government in manufacturing global education in achieving learning in 21st century was very weak due to some certain fundamental problems such as corruption, poor implementations and many more. The approach employed was purely secondary data. Conclusion and recommendations are drawn to guild possible actions plans for sustainable modern education in 21st century in Nigeria.

Keywords: *Nature Development, Modern, Technology, 21st Century & Education*

Introduction

Between 18th to 19th centuries the United States was a world leading in the area of modern technological educational system, rapid transformation in terms of economic, political and other aspect, resulted from industrial revolution have rapidly improved the educational industry in the entire European nations. Virtually, as we already leaved 20th century and moved to 21st century what could have been our experiences in the past 100 years. Africa has smoothly moving into modern methods of education, the shift from 'analog' to 'digital' methods of teaching, have greatly influences, socio-economic and political advancement, not only in the area of education, but in all aspect of our lives. Nigeria has witness, slow movement of modern technological methods for learning, due to poor implementation educational policy and programmes from the government. Despite poor policy implementation and programmes Nigerian has achieved vital shift from manual teaching to more digital teaching in some private own institutions of learning. For that reasons, number of governmental organizations, non-governmental organizations, agencies, shareholders, parents associations and individuals, have raised beautiful donations particularly, in the area of science and technology.

Brief History of Education in Nigeria

Long before the Europeans arrived, education had been part of Nigerians. The Children were taught about their culture, social activities, survival skills and work. Most of these education processes were impacted into the children informally; a few of these societies gave a more formal, teaching, of the society and culture. In these Societies, there are formal instructions that governed the rites of passage from youth into adulthood. The youth is expected to have attained the necessary social and survival skills as well as having a grounded knowledge in the culture. These are the foundations of education in Nigeria, and upon them were the western education implemented, upon. European Education was introduced into Nigeria in the 1840s. It began in Lagos, Calabar and other coastal cities. In a few decades schooling in English language gradually took roots in the Nigeria. During the Colonial years, Great Britain did not promote education. The schools were set up and operated by Christian Missionaries. The British colonial government only funded a few schools. The policy of the government was to give grant to mission schools rather than expand the system. In the northern part of Nigeria, which was predominantly Muslim populated, Western-style education was prohibited. The religious leaders did not want the missionaries interfering with Islam. This gave way to establishing Islamic school that focused primarily on the Islamic education.

Today, adult literacy has been estimated to be over 78 percent for men and 64 percent for women. These statistics were made based on estimate literacy in English. That excludes the literacy in Arabic among northern Muslims. It is therefore not erroneous to call Nigeria a nation dominated with educated persons. Prior to Nigeria's independence, Nigeria had only two established Post-secondary Institution. Yaba Higher college (founded in 1934, Now Yaba College of Technology) and the University of Ibadan was founded in 1948. It was then a College of the University of London until two years after the independence when she became autonomous. More prominent universities which include University of Nigeria, Obafemi Awolowo University (formerly University of Ife), Ahmadu Bello University and Mohood Abiola Kashimawo University (formerly University of Lagos) were founded in the years that followed the Independence. In 1970s more universities were founded which include University of Benin (founded in 1970), and new university opened in Calabar, Ilorin, Jos, Port Harcourt, Sokoto and Maiduguri. In the 1980s, more universities were opened as well as institute specializing in Agriculture and Technology. A number of Polytechnics were also opened, which includes the Yaba College of Technology in Lagos and Kaduna Polytechnics.

In 1980, the estimated enrollment in the primary schools was 12 million, Secondary and technical colleges 1.2 million, teachers colleges 240,000 and Universities 75,000. One would expect that with such an estimate, the Nigerian education in Nigeria three decades after would have greatly improved. Unfortunately the reverse has been the case. The present decline in the Nigerian education system can be traced back to the 1980s and 1990s. Then there was a shortage of qualified teachers, the few qualified teachers were not paid in a timely manner. The number of schools did not grow with the population and many of the existing schools were inadequately funded resulting in poor maintenance. In the Universities inadequate funding led to the shortage of space and resources. Increase in tuition fee often resulted in riots leading to cancellation of semesters. Industrial actions by the University Staff requesting for higher salaries and better working conditions also compounded the situations.

However, today governors in most state are addressing these issues. The damage to the educational system has been done. Most graduates lack the necessary survival and social skills that should have been learnt in schools. These have led to many disastrous situations in the nation. The center of the nation's growth "the Education system" no longer holds value; hence the entire nation is falling apart. Products of the Nigeria education system are not employable, causing massive unemployment and under-

development in the country. No survival skills leading to increased poverty rate in the country. The situation however is not entirely hopeless. The foundation of education in Nigeria upon which the Europeans laid the western-style education is strong. This has managed to hold the educational system of the country together through the trouble days. However, if left unattended, we will all join Chinua Achebe and exclaim: Things fall apart. The center cannot hold… Anarchy is set forth everywhere.

Statement of the Problem

It is a paradox that Nigeria is a rich country, inhabited by the poor and accounts for the highest percentage of poor education, particularly in the area of science and technology in Africa such has been a result of poor encouragement of government in assisting private and public schools, poor funding, inadequate class rooms, lack of teaching aids, such as projectors, computers, laboratories, and e-libraries, qualified teachers are lacking the skills and knowledge that could enable them to move from analog to more digital world, poor polluted learning environment, ineffective motivational tools, social vices, such as examination malpractice, cultism, hooliganism and corruption, etc. all of these have affected educational system particularly, the application of modern technology in Nigerian educational system. The table below, shows critically, problems associated with poor movement from "manual" to "digital" method of teaching. Particularly in educational industry where many schools have suffered setback in teaching and learning activities, however, the slow movement from blackboard to white board, from chuck to makers is a create development but is a slow movement. Only few schools adopt projectors in teaching and learning.

Fig. 1: Summary of Stated Problems

Source: 2019 (Review)

Poor Finding	
Poor Educational Infrastructure	
Inadequate class rooms	
Lack of Teaching Aids	
Poor Implementation	
Poor Polluted Environment	
Motivational Problems	
Social Vices	
Examination Malpractice	
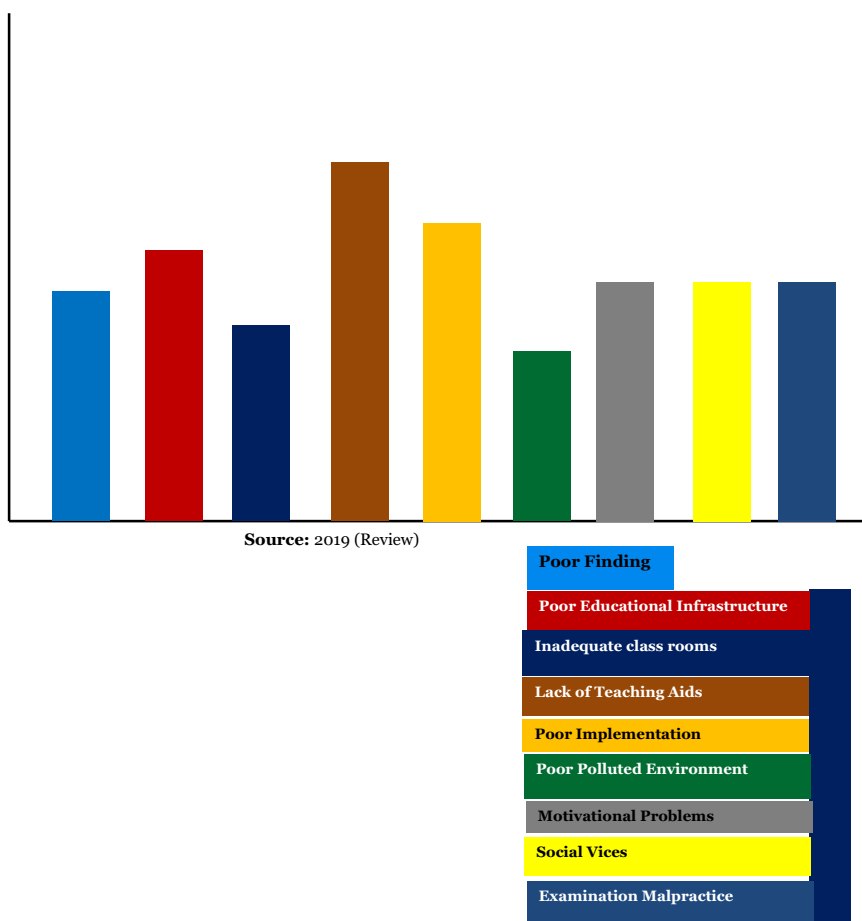
Figure (1) shown above, indicated the summary Problems stated.

Objectives of the Study

1. To explain the origin and development of education in Nigeria
2. To examine the role of the government and other agencies in enhancing quality modern technological teaching and learning in 21st century.
3. To highlights some shortcomings associated to teaching and learning in 21st century in Nigeria
4. To offer recommendations on strategic approaches on tackling these issues.

Review of the Relevant Literature

Impact of Technology in 21st Century

Technology has directly or indirectly enhanced the lives of people in the entire universe, the movement of technology from simple to more complex form, particularly; in the educational sector has influences number of African nations in competing with their counterpart like Europe, and Asian countries. However, the transformation from analog to digital movement in terms of teaching and learning has greatly promoted the quality and quantity of education in Sub-Sahara Africa. Technology has impacted the lives of every Nigerians, not only in the area of education, but in every aspect of life, such as agriculture, business, education, entrepreneur, healthcare, government and security. Technology has transformed the face of Nigerian, particularly, in the transactional activities which carried out through phone in different country, easy access to books and interments. The development of technology in Nigeria has been recognized internationally, similarly, Nigeria has the highest market in Africa, in the area of Facebook. According to Mark Zukerbearg, founder of internet social networking site argued that, technology have moved the lives of many Nigerians, in terms of educations, easy access to research and innovation, business, and economy, which create opportunities for self-reliance and improved social status of individuals. Zuckerbeag, noted that, technology has changed and is continue changing the lives of children from ages 9 to 13 having access to learn basic coding development of website, access books from the internet's and many more.

Technological Methods Use in Public and Private Schools

Public and private schools have welcome technology as a game of change, through the use of internet in reading, writing and learning funs exciting and remarkable experiences for both teachers and students. Teachers now in both public and private schools have access to internet, reading materials, and students have demonstrating with very beautiful skills, the innovates and they create new ideas all as a result of the applications of modern technology in schools Student can understand and explain various forms of coding, children in primary schools could apply the A to Z software application that could enable them access to good education.
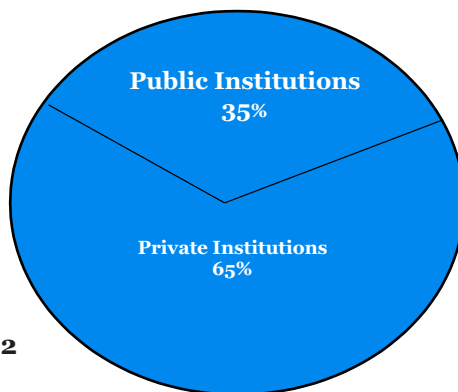
Fig. 2

Source: 2019 reviewed

This shows that, the utilizations of digital methods of technology is more pronounce in the private schools then in the public schools. The result from the researchers reviewed that, in 2019, there is a shift towards analog to more digital approach.

Role of Government and Other Agencies
Government is playing fundamental roles in enhancing quality and effective modern technological teaching in across schools in the country so as to meet up with digital world. Long ago government has sponsored many teachers and students within and outside the countries, with the mission to improve in their modern methodological aspect of teaching. Multinational organizations have adopted similar policy and programmes with the hope to enhance and exposes some teachers and students on issues regarding current modern teaching, non-governmental organizations, stakeholders, philanthropic,, individuals as well as corporate organizations have provided, computers, projectors, photocopy machines, laboratories, internet supply, and e-libraries across all schools in Nigeria. Examples, are GLO, MTN, AIRTEL, ETISALAT, SHELL OIL COMPANIES, OANDO ETC. there goals where to ensure both teachers and student have exposed to global modern teaching. Funmi, & Adebajo, 2016. Argued that, the only way the only way country will eradicate poverty is through the application of modern technology in teaching and learning process. And development for them is the bedrock of development. They argued that, it would not be wrong to say education is the bedrock of technology as technological knowledge and skills can only be transformed through education, which allowed people to initial and make their own path.
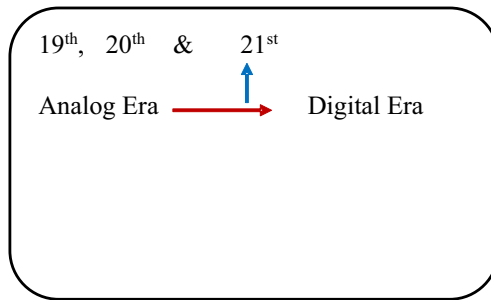
Fig. 3

This figure shows that the chances in the modern technology from 19th, 20th and 21st century were not effective and efficient in Nigeria. Still, number of public schools still apply black board only in few institutions employ white board.

ICT in 21st Century

Adebajo, 2016. Argued that, additionally, the concepts of electronic and technology have greatly impacted education around the world, but specifically, Nigeria we have incorporated ICT in educational curriculum for secondary schools, in 2004 edition on national policy on education. The use of ICT in educational industry has promote easy learning and research in Nigerian institutions, and re-manufactures online courses, which have proven to be very effective because it provides a low cost alternative to higher education. Adebajo, noted that, ICT, IN 21ST century has provide easy access to research and development, online materials.

PRIVATE INSTITUTIONS

PUBLIC INSTITUTIONS
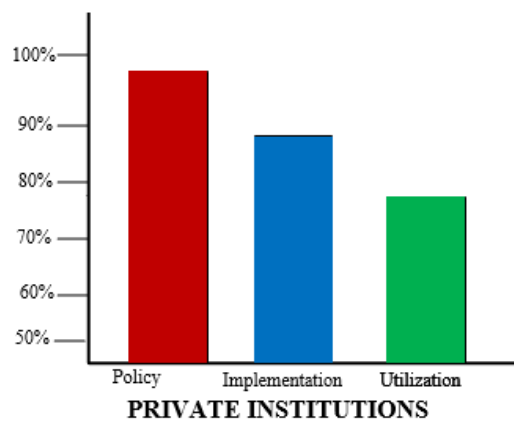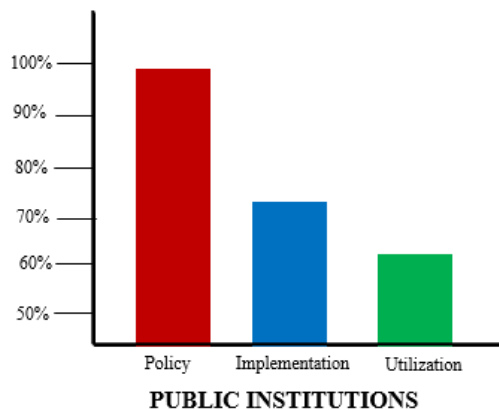
Sources reviewed 2019.

The study clearly, indicates the level of manually and modern methods of teaching in both public and private institution. As indicated in box (4). Which shows that, Nigerian is yet to enter the digital era, however, the country only experience slow movement despite globalization in the 21st centuries, the shift from black board and chuck to white board and maker only few schools employed projector in teaching and learning methods example see below:
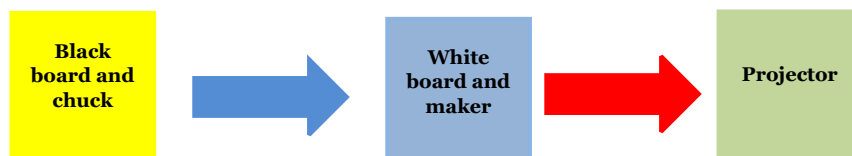
Table 3 of the above shows that, on the area of policy, the country has policy documented and codified, but the implementation is very weak and the utilization is always a problem. The graft shows that, the relationships between public schools and private schools in terms of the following, policy, implementation and utilization, private school has been in the highest proposing on the utilization of modern material them the public schools.

Funding /Constrains
The gross under funding of the educational sector in the country in general and the neglect of the maintenance of the physical facilities, instructional and living conditions

have deteriorated in many of these schools, class- rooms, libraries and laboratories are nothing to write home about, all leading to decline in academic standards. Attention must be focused on these areas too if these educational institution are to get out of the woods and this is only possible through adequate funding. Since 1986 when the federal military government introduced the structural adjustment programme SAP, allocation of financial resource started to fall coupled with the consistent decline in the value of local currency till date. Which have also consistently affected the procurement of imported technical and scientific equipment's, books, journals and other instructional needs in the education system in Nigeria today, education needs a total overhauling and restructuring, this reform is required to improve the performance of higher education in the country, the nation entered the 21st century insufficiently prepared to cope or compete in the global economy, where growth will be based even more heavily on technical and scientific knowledge (World Bank 1994). It is also a well known fact that the inadequacies always observed among many undergraduates and graduates alike is as a result of the inadequacies associated with the primary and the secondary education system in Nigeria.

It is however pertinent for the government of the day to design a suitable guidelines for funding education. For instance, UNESCO has recommended that 26% of the total budget of a nation should be allocated to education. But Longer Commission of 1991 observed that the percentage of recurrent budgetary allocation to education in Nigeria has never exceeded 10%. Though, the system is expensive to keep afloat, quality however in any form is partly a function of the total fund made available to the system and judiciously utilized for the purpose to which it is meant for. Funds are required and necessary to maintain both the human and material resources of the system in order to achieve desired goals. Also there is the need for an effective monitoring of the management of fund presently being allocated to the sector, as effort should be intensify to improve on what is currently being allocated to the system.

Educational System in Nigeria Problems and Prospects

Corporate organizations today in the country are fond of employing series of measures which are in effect bias and unproductive. They indulge in an unfair selective judgment on applicants seeking employment opportunity into their establishment, by way of using certificate grades as well as institution attended as prerequisites for interview attendance and recruitment. In some cases, they rather prefer candidates with first class and second class grade certificate and those that attended the first generation universities at the detriment of some others with lesser grade who might be

better if given equal opportunity. This is their own way of encouraging irregularities and malpractices in the process of grade acquisition by prospective job seekers, therefore compromising standard and perpetual dependence on the services of foreign expatriates for both medium and high tech services.

Conclusion

In some states for the past ten years, not even a single structure have be added to the existing one or a significant maintenance, repairs or replacement of learning facilities and equipment rather the responsibility of school ownership and funding is being shifted while playing down on expansions of facilities to meet with the demand of increasing population. The monopoly enjoyed by WAEC as the national examination body prior to 1999, (when NECO was introduced) coupled with its consistent broadening of examination syllabus, its overstretched facilities due to the rapidly increasing number of applicants could be said to be the basis for examination malpractices in the country. Some public schools are only known to be functional during enrolment and examination period while most of the private schools, lack visible structure and any equipment required for science practical and studies, but enroll students with outrageous charges. More attention is required on the part of the government in the provision of vocational and technical education to growing number of prospective students seeking admission to the few and poorly equipped centres. The less emphasis on this aspect of education in Nigeria presently is also an observed causal factor in the decline in educational standard. As it is more of a mono system of education. For an educational system to be classified as functional and effective, it must be all encompassing and all embracing. Thus, a well-focused and define pattern of educational system that is all embracing should be fashioned out where vocational and technical education will be well developed and every child given the proper and kind of education he or she desires, based on the psychomotor, cognitive, and affective domain.

Recommendations

1. Government and the private sector should pull in more effort and resources towards the development of education
2. Educating and re-orientation of teachers, parents and students on the need to discourage examination malpractice in schools
3. More vocational and technical education centers should be establish and the few existing ones properly equipped and staffed.

4. An independent inspectorate committee should be put in place to regularly monitor activities in schools as the existing inspectorate unit has seize to function effectively v Government should take over payment of enrolment fees for both primary six examination and secondary schools external examinations.
5. Qualitative and affordable education should be made available for all
6. Schools should be properly staffed and equipped.
7. Applicants seeking job placement irrespective of grades obtained and institutions attended should be given fair and equal opportunity to compete for placement.
8. More modern learning aids such as computers, internet web sites facilities, overhead projectors, firms etc. should be provided in schools
9. Online registration being introduced now for school examination enrolment, by the National Examination Body should be encouraged; this will reduce the exploitative tendencies by school heads.

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CHAPTER 5

Public Health Education, Skills and Professional Training: Critical Points of Considerations

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Abstract

Health-related behaviours are actions performed for reasons other than health but that have health effects. The study examined public health education and professional mentorship training with the aim of identifying some critical issues of health education, health behaviour, health communication, health promotion and health literacy in particular. To achieve the objectives of the paper, descriptive but analytical approach were utilized. Empirical evidence showed that a functional health care system relies on efficient health literacy programme as the bedrock of health security. Evidence also showed that inadequate adult literacy skills are strongly associated with less health knowledge, worse self-management skill, higher hospitalization rates, poorer physical and mental health, greater mortality risk and higher health care cost. Meanwhile, actions plans must be instituted to include: strengthening partnership, literacy survey, training/skill improvement, mass literacy campaign and funding among others which have the potential to reduce health inequalities. In conclusion, the characteristics and skills required for effective public health education and literacy must be anchored on empathy, compassion, and respect, integrity and the ability to establish and maintain a trusting relationship between the mentor and mentee.

Keywords: Health education, health behaviours, health promotion, health communication, health literacy, mentor, mentee.

Introduction

In 1948, the World Health Organization (WHO) defined health in its constitution as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (WHO, 1974, p.29). However, the definition of health by WHO has received stern criticisms over the years some misleading among which are: "state"; inadequate dimensions of the definition to capture the variations in health (Bensley, 1991; Perrion and McDermott, 1997); the subjectivity of wellbeing; immeasurability of health (Mc Dowen and Newed, 1987); idealistic/utopian view of health and health as an end product, whereas most people perceive health as a means of achieving something that they value more highly (Cook, 2004). Public health is considered to be about the health of people or communities, as opposed to individual health – it is everyone's responsibility. Acheson (1988) defined it as the science and art of preventing diseases, prolonging life, promoting, protecting and improving health through the organized efforts of society'. Public health involves people and as an important member of the caring professions of public health workers. It monitors disease outbreak, both acute and chronic, to prevent injuries and to understand the distributions of risk factors in our communities (Asia-Pacific Academic Consortium for public Health, 2014). The functions of public health are: surveillance, analysis and evaluation of populations' health status; development of policies and plans that support individual and community health efforts; health promotion; disease prevention, health protection and evaluation of public health policies. Meanwhile, the objective of health education is to make people value health as a worthwhile asset with desire to live long and feel well; and with the support of health personnel, to learn what they can do as individuals, families and communities to protect and improve their own health. The more people value health, the more they will be willing to make the appropriate allocation of resources to promote and safeguard their own health (Adetokunbo and Herbert, 2003).

The public health scenarios in Nigeria have been captured in several empirical studies. According to Fajal, Jamil and Chowdhury (2017), the major public health challenges that Nigeria faces are infectious disease, maternal mortality, infant mortality, poor sanitation and hygiene, non-communicable disease and communicable diseases. As summarized by Popoola (2019), despite the collaborative efforts of the Nigeria government and various non-governmental organization to provide efficiency and effective health care delivery in Nigeria, contemporary problems render these efforts much less than desired. Some of these problems or challenges include both emerging and re-emerging health problems such as HIV/AIDS pandemic, infectious disease

(like Ebola, Lassa Fever, Yellow Fever, Malaria), inadequate payment of public health workers among others.

The objective of this chapter is to present systematically an overview of public health education and training with special consideration on its components of: health behaviors, health promotion, health communication and health literacy and the role of theory in health education and promotion. To ensure that the objective of the study is clearly achieved, descriptive tools of analysis (boxes, tables and charts) were analytical used. The rest of the chapter is presented as follows: literature review and conceptual clarifications is presented in Section 2 following the introduction. Section 3 provides an overview of public health education, section 4 emphasizes on ethical issues in public health education, section five is on mentorship training in global health research, while section 6 concludes with some recommendations.

Literature Review
Theory of Public Health and Promotion
The core concepts in behavioral and social services are organized in the form of theories. Theories are developed as a result of research. Kerlinger and Lee (2000) defined theory as "a set of interrelated, concepts, definition and predisposition that present a systematic view of events or situations by specifying relations among variables in order to explain and predict the events of situations". In health education and health promotion, we are primarily interested in predicting or explaining changes in behaviour or environment. A theoretical foundation is becoming almost mandatory for practitioners of health education and health promotion (NCHEC, SOPHE & AAHE, 2006). Theories help us articulate assumptions and hypothesis regarding the strategies and targets of interventions. Polit and Hungler (1999) have identified three types of theories. Macro theories or grand theories which describe large segment of the environment or human experience. Middle-range theories describe or explain phenomena such as specific behaviours. The third one is the descriptive theories which describes or explained a simple discrete phenomenon, such as Hans Selye's (1974) explanation of general adaption syndrome.

Glanz, Rimer and Lew's (2002) classified theories as explanatory and change theory of action. Explanatory theories help describe and identify why a problem exist and search for modifiable constraints. Change theories guide the development of interventions and form the basis of evaluation. Theories derived from behavioral or social services help the practice of health education and health promotion in several

ways. First, it helps in developing programme objectives that are measurable. Second, the theory helps in identifying the method to use in health education or health promotion. Third, the theory helps in deciding the timing of the intervention. For example, interventions that prevent use of tobacco should be implemented at the middle-school level because that is when the behaviour starts to developed. Fourth, the theory helps in choosing the right mix of strategies and methods. Fifth, theory aids communication between professionals. The construct of each theory remain the same in different applications. Sixth, the use of theory in health education helps in replications of the programme because the same construct can be used from one intervention to the other. Lastly, behavioural and social science theories help in designing programmes that are more effective and more efficient. The benefits of theory can be summarized in Table 1.

Table 1: Benefits of Theory in Health Education and Health Promotion

1	Helps in discerning measurable programmes outcomes
2	Specifies methods for behavioural charge
3	Identifies the timing for interventions
4	Helps in choosing the right mix of strategies
5	Enhances communication between professionals
6	Improves replication
7	Improve programme efficiency and effectiveness

Source: Jones & Bartlett Learning, LLC;

The generic depiction of a behavioural theory is shown in the Figure 1.

Fig. 1: Generic depiction of behavioural theory
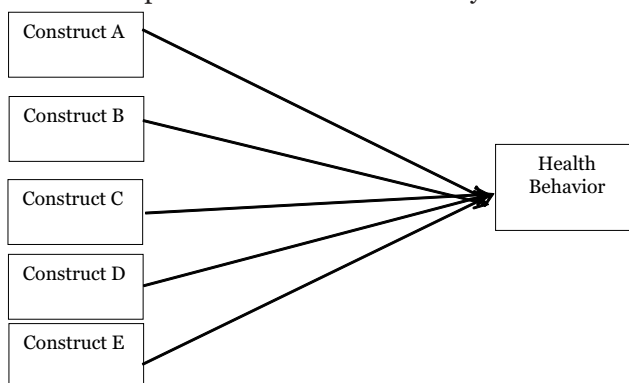
Source: Jones & Bartlett Learning, LLC: 9399

Conceptual Clarifications

This subsection clarifies the concepts that shaped our discussion on public health education. The concepts are presented as follows:

a) Health Education

Health education can be defined as "communication activity aimed at enhancing positive health and preventing or diminishing ill-health in individuals and groups through influencing their believes, attitudes and behaviours of those with power and of the community at large" (Downier, Fyfe & Tannahill, 1990: p.28). The 2000 Joint Committee on Health Education and Promotion Terminology (Gold & Miner, 2002, p.3) defined health education as "any combination of planned learning experience based on sound theories that provide individuals, groups and communities, the opportunity to acquire information and skill needed to make quality health decision". The World Health Organization(WHO,1998,p.4) defined health education as " comprising consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge and developing life skills which are conducive to individual and community health" In the same way, Green and Kreuter (2005, p.G-4) defined health education as "any planned combination of learning experiences designed to predispose, enable, and reinforce voluntary behavior conducive to health in individuals, groups and communities". The take away points from the definitional discourse are presented in Box 1.1 health education and the health services".

Box 1: Summary of Health Education Definition

1	Health education is a systematic, planned application, which qualifies it as a science.
2	The delivery of health education involves a set of techniques rather than just one, such as preparing health education informational brochures, pamphlets and videos; delivery lectures; facilitating role plays or simulations; analyzing case studies; participating and reflecting in group discussion, reading; and interacting in computer-assisted training.
3	Health education encompasses community mobilization, networking, and advocacy.
4	The primary purpose of health education is to influence antecedents of behavior so that healthy behaviours develop in a voluntary fashion.
5	The common antecedents of behavior are awareness, information, knowledge, skills, beliefs, attitude, and values.
6	Health education is performed at several levels. It can be one-on-one through counselling, group of people employee wellness fair, multiple-channel or multiple approach campaign.

Source: Jones & Bartlett Learning, LLC: 9399

Health education and health services relates and accordingly refers to all aspect of health behaviour including the use of health service and self-treatment. It is designed to help people improve their personal habits and to make the best use of the health services. Health education should feature as an integral part of the health service and all health personnel should accept responsibility for contributing to health education and health programmes. Specialists in health education are required to make accurate assessment of the needs of the population, to develop suitable materials for health education, to train other workers including voluntary health workers and to assist evaluating local health education programme.

In order to be effective, teachers of health education, health educators and other healthcare givers must also become learners, listening carefully to the views and concerns of the community and involving them in identifying health priorities and in finding feasible solutions to existing health problems. Health education should be an interactive process between health professionals and the community, with each partner approaching the issues from a different perspective but establishing common grounds where their respective views and opinions overlap.

Figure 2 presents the interactions between health educators, health care providers and communities.

Fig. 2: Health care as perceived by communities and health care providers (WHO, 1983).
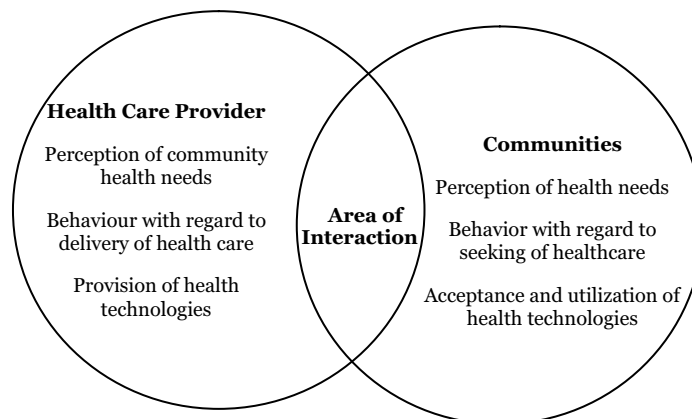
b) Health Behaviour

The World Health Organization (WHO, 1998: p18) defines health behaviours as "any activity undertaken by an individual regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behaviour is objectively effective towards the end". Gochman (1988, p.1 67, 1997, p.3) defines health behaviours as "those performance attributes such as belief, expectation, motives, values, perceptions and other cognitive elements, personality characteristics, including affective and emotional states and traits; and behavioral patterns, actions and habits that relate to health maintenance, to health restoration and to health improvement". The outstanding elements of the definition are: maintenance of health, restoration of health, and improvement of health. These outstanding elements represents the three levels of prevention: namely, primary, secondary and tertiary preventions (Modeste & Tamayose, 2004; Pickett & Hanlon, 1998). Primary prevention refers to actions taken prior to the onset of a disease or injury with the intention of removing the possibility of their ever occurring. Secondary prevention refers to actions that block the progression of an injury or disease at its incipient stage. Tertiary prevention refers to action taken after the onset of disease or an injury with the intention of assisting the individual with the disease or disability. The actions for primary, secondary and tertiary level cases are taken at individual, interpersonal, community and public policy levels. Hence health behaviour can be defined as all actions with a potentially measurable frequency, intensity and duration performed at the individual, interpersonal, organization, community or public policy level for primary, secondary and tertiary preventions.

Some health behaviours have positive attributes, such as promoting physical activities or eating of fruits regularly. Other health behaviours are negative such as smoking and alcoholic drinking. These behaviours can be grouped into two: risk behaviour and protective behaviour which are proven to be associated with increase susceptibility to a specific disease or ill health". For example, indiscriminate sexual behaviour is a risk behavior for sexually transmitted disease, including HIV/AIDS. Protective behaviour aims to protect a person from developing ill-health or a specific disease. For example, a person may be immunized against tetanus and thus prevent the disease. Green and Kreuter (2005) divided protective behavior into two classes: health directed and health related protective behaviours. Health directed behaviours are actions a person consciously pursues for health improvement or health protection, such as seeking an immunization, getting a physical examination, eating a low-in-fat food, or using a condom for sex. Health related behaviour are actions performed for reasons other

than health but have health effects. An example is an individual who is trying to lose weight in order to improve his or her appearance.

Any behavior is influenced by factors at five levels. The first level is the individual level factor. The second is the interpersonal factor. The third, institutional or organizational level. For example, these may be a policy at the work place that requires every person to work out for an hour, and that may be the reason the person is performing the physical activity. The fourth level is on community policy factors. The final level is on the role of public policy factors. For example, the laws and policies requiring the use of seat belts while driving may make a person perform that particular behavior.

c) Health Promotion

Health education encompasses a wider range of functions, including community mobilization, networking and advocacy, which are called health promotion. According to Green and Kreuter (2005, p.G-4), health promotion is defined as "any planned combination of educational, political, regulatory and organizational support for actions and conditions of living that is conducive to the health of individuals, groups or communities. The 2000 Joint Committee on Health Education and Promotion Terminology (Gold & Miner, 2002, p.4) defined health promotion as "any planned combination of educational, political, environmental, regulatory, or organizational mechanism that support actions and conditions of living conducive to the health of individuals, groups and communities". *The Ottawa Charter for Health Promotion* (WHO, 1986, p.1) defined health promotion as "the process of enabling people to increase control over, and to improve their health". The Charter also identified five key strategic actions for health promotion as enunciated:

1   Building of healthy public policy
2   Creating physical and social environment supportive of individual's change
3   Strengthening community actions
4   Developing personal skills such as increased self-efficiency and feelings of empowerment
5   Re-orienting health services to the population and partnership with patients

In furtherance of the key strategies, the *Jakarta Declaration* identified five priorities for health promotion to include:

1   Promoting social responsibility for health
2   Increasing investment for health development
3   Expanding partnership for health promotion
4   Increasing community capacity and empower the individual
5   Securing an infrastructure for health promotion.

Table 2 summarizes the 38 focus areas in *Health People 2020,* which underscores the importance of health promotion.

Table 2: Focus Areas in Healthy People 2020

Access to health services	HIV
Adolescent health	Immunization and infectious disease
Arthritis, Osteoporosis and chronic back conditions	Injury and violence prevention
Blood disorders and blood safety	Maternal, infant and child mortality
Cancer	Medical product safety
Chronic kidney disease	Mental health and mental disorder
Diabetes	Nutrition and weight status
Disability and secondary conditions	Occupational safety and health
Early and middle childhood	Older adults
Educational and community-based programme	Oral health
Environmental health	Physical activity and fitness
Family planning	Public health infrastructure
Food safety	Quality of life and well being
Genomics	Respiratory diseases
Global Health	Sexually transmitted diseases
Health communication and health IT	Social determinants of health
Health care associated infections	Substance abuse
Hearing and other sensory or communication disorders	Tobacco use
Heart disease and strike	Vision

Source: Jones & Bartlett Learning, LLC; 9399.

Box 2 summarizes the commonality of the definitions of health promotion

Box 2: Building, advocacy, lobbying, policy development, formulating legislation and developing social norms.

1	Unlike health education, health promotion does not endorse voluntary change in behaviour but utilizes measures that compel on individual behaviour change.
2	Health promotion is done at the group or community level.
3	The behaviour change in health promotion comes from measures that an individual may not like, for example, an increase in insurance premium for a smoker.

Source: Jones & Bartlett Learning, LLC; 9399:7

Community participation and health education are interwoven. The role of the community in making choices and decisions with regard to priorities and strategies should be adequately supported by health education. Again, the role of the community in the planning, organization, operation and control of health services has been highlighted and documented in the literature.

> Primary health care is an essential health care... made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination (Alma Ata Declaration 1978, p:3 04)

d) Health Communication

Communication means the transmission or exchange of information. This implies the sharing of meaning among those who are communicating. Communication serves the purpose of: (1) initiating actions, (2) Making known needs and requirements, (3) Exchanging information, ideas, attitudes and beliefs, (4) Engendering understanding and (5) Establishing and maintaining relations (U.S Office of the Disease Prevention and Health Promotion, 2016). Communication therefore, plays an important role in the delivery of health care and the promotion of health care delivery.

According to Healthy People 2010 guidelines, health communication encompasses the study and use of communication strategies to inform and influence individual and community decisions that enhances health. It links the domains of communication and health. Health communication encompasses the study and use of communication strategies to inform and influence individual and community knowledge, attitude and practices with regard to health and health care. The field of health communication represents the interface between communication and health and is increasingly recognized as a necessary element for improving both personal and public health issues. Health communication can contribute to all aspects of disease prevention and health promotion. It has taken place at different levels and has been schematically identified to include:

Fig. 3: Health Communication and Community Participation
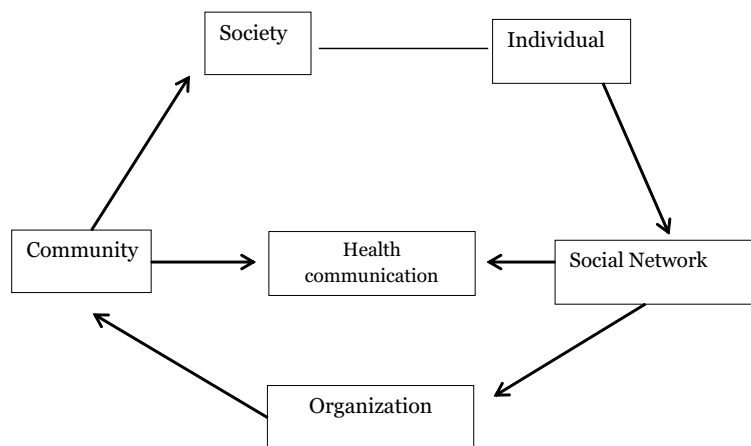
Source: Author's Construct (2020)

The many roles of health communication are highlighted by the Centre for Disease Control and Prevention to include:

1. Prompt action
2. Increase knowledge and awareness of a health issue, problems or solutions
3. Influence perceptions, beliefs, attitudes and social norms
4. Demonstrate or illustrate skills
5. Increase demand for health services
6. Reinforce knowledge, attitudes and behaviours
7. Refute myths and misconceptions
8. Help coalesce organizations relationships
9. Advocate for a health issue or a population group

Meanwhile, poor communication has a strongly negative impact on health outcomes of (a) chronic diseases including diabetes and hypertension, (b) acute illnesses, including pain control, morbidity following surgery and length of hospital stay and (c) mental illnesses such as depression and schizophrenia. Improvement in communication is healthcare setting, on the other hand, lead to better health outcomes. These changes can lead to greater equity in health and health care for all irrespective of race, religion, ethnicity, socioeconomic, education and minority populations. Better communication can lead to improvements in prevention,

motivation for behavioural change and adherence to treatment (Nkanunye & Obiechina, 2017). The authors outlined that the use of health communication strategies is crucial to ensure optimum utilization of health information provided by the health educators so that individuals and communities may observe healthy living practices and seek appropriate medical help in due time. Some of the communication strategies to be utilized for optimum efficiency include:

1. Traditional and rural based communication
2. Broadcast media tools (radio and television)
3. Public service announcement
4. Newsletter/Journals
5. Bill boards/posters
6. Social media/internet

The proximate barriers of effective health communication are;

1. Low health literacy
2. Poor communication link
3. Poor research
4. Low of receivers
5. Unclear message
6. Inappropriate channel
7. Inadequate feedback and noise distorting the message.

e) Health Literacy

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services that are required to make appropriate and informed health decision(Oyewole, Dipeolu, Ajuwon & Odetola, 2019). Similarly, the 2000 Joint Committee on the Health Education and Promotion Terminology (Gold & Miner, 20002, p.5) defined health literacy as "the capacity of an individual to obtain, interpret and understood basic health information and services and the competence to use such information and services in ways that are health enhancing". As posited by Oyewole et al., (2019), health literacy is relatively a new concept in Nigeria. However, it has been a global concept due to its far reaching implications on the health outcomes and well-being (Kickbusch, 2002). According to Adekoya et al. (2015), factors influencing health literacy in Nigeria are: culture and belief system, poor and ineffective communication, lack of education, and low educational level, and low socioeconomic status. Low health literacy follows poorer health status, poorer disease outcome, lack of understanding in

the use of preventive services, frequent hospital visitation among others. To understand health literacy, Zarcadoolas, Pleasant, and Greer (2003) have suggested a four-part model, namely:

1   Fundamental literacy/numeracy: This include spoken language, numeracy behavioural, cognitive and social skills
2   Literacy pertaining to science and technology: This include Technological and technical complexity
3   Community/ civil literacy: This involved dialogue, decision making, media interpretation skills, understanding civic and legislative functions
4   Cultural literacy: This involves collective beliefs, customs, world- views, and social identity relationship to interpret and produce health information

Health literacy is measurable. A few instruments have been commonly used in studies to directly measure an individual literacy or health literacy in relation to health outcomes. These include Rapid Estimate of Adult Literacy in Medicine (REALM) (Davis *et al*, 1993) and the test of functional health literacy in Adults (TOFHLA) (Parker *et al.,* 1995). The REALM and TOFLHA focus primarily on reading-related skills (Berkman *et al.*, 2004). However, the National Assessment of Adult Literacy (NAAL) is considered the most comprehensive tool, though, it's not publicly available.

Fig. 4: Local Action to Improve Health Literacy and Reduce Health Inequalities
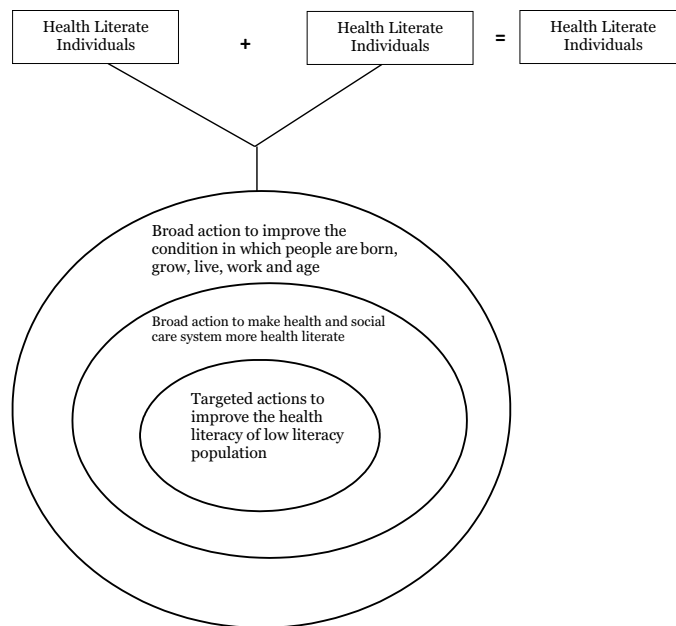
Source: Public Health England (2015)

Figure 4 illustrates the fact that strategies to improve health literacy are important empowerment tools which have the potential to reduce health inequalities. This is because people most at risks of limited health literacy are also known to have the poorest health outcomes (WHO, 2013). Health literacy also plays a larger role in influencing the health outcomes among people with lower levels of education than among those with higher education (Heide, Wang and Droomers, 2013).

The major causes of adult illiteracy in Nigeria, which are related to health illiteracy as espoused by Oyewole et al., (2019) can be summarized:
1. Problems in primary education (low enrolment rates, high dropout rates, inadequate facilities, poor teaching/learning materials, irrelevant curriculum)
2. Poor enrolment rates in adult literacy programmes.
3. High drop-out rates linked both to economic problems which force health learners to abandon classes in favour of income-generating activities and to problems relating directly to the adult literacy programme such as lack of relevance, funding issues and low morale among adult literacy instructor.

4. Literacy instructors are not properly trained in facilitation skills and gender awareness.
5. The exclusion of women from adult education programmes.

Action Plan to Improve Health Literacy in Nigeria

The Action Plan to Improve Health Literacy is a set of health literacy priorities to be addressed in Nigeria. In accordance with its mission, it will develop, implement, and evaluate programmes and provide resources to improve health literacy and healthcare facilities and institutions will work to achieve the five priorities:

Priority 1: Incorporate health literacy improvement in the mission, planning and evaluation programme.

Priority 2: Support health literacy research, evaluation, training, and practice

Priority 3: Conduct formative, process, and outcome evaluation to design and assess materials, messages and resources.

Priority 4: Enhance dissemination of timely, accurate, and appropriate health information to health professional and the public.

Priority 5: Design health literacy improvements to healthcare and public health system that enhance access to health services.

Health literacy has the key to whatever health intervention programmes that are implemented to ensure health security (Oyewole et al., 2019) and to achieve these objectives, there must be: i) strengthening capacity to optimize use of meagre resources, ii) literacy survey aimed at presenting some realistic assessments, iii) training, aimed at supporting policies and programmes on adult education, mass literacy campaign and funding.

Monitoring and Evaluation

Determining individual health literacy has always been the first step to address health literacy challenges among the population. But in order to align people's skills and abilities with the difficulties of accessing health services, it is expedient to evaluate the accessibility or otherwise of the health services. Planning, monitoring and evaluation

becomes handy to ensure that there is health literacy. Proper evaluation of a particular health services programme will be anchored on a development goal and how the goal will be achieved a within a timeframe. The need for setting appropriate and feasible timelines is very important in programme evaluation.

The Case Study of Public Health and Health Education Institutions
Medical Education Partnership Initiative (MEPI)

The Medical Education Partnership Initiative (MEPI) is the biggest intervention in scaling up the education and training of health workers in Africa while the MEPI symposia converse the largest number of multidisciplinary health professions educators. MEPI funding has spurred much enthusiasm that resulted in new public health school, rural training sites, and matching funds. It increased the quality and quantity of health care workers. It caused a culture of change in how medical/public health school collaborate instead of competing with each other and encourage them to form networks to share best practices and leverage resources. Another MEPI's milestone has been the adoption of information communication technologies to enhance teaching, expand student and faculty access to electronic education materials and current scientific literature.

The MEPI work complements the recommendations made by the high-level commission on health employment and economic growth to stimulate and guide the creation of at least 40 million jobs in the health and social sectors (Omaswa, Elsie, Derbew & Seble, 2018) and to reduce the projected shortfall of 18 million health workers, primarily in low- and lower-middle-income countries by 2030 (Health Workforce Report, 2019). It is hoped that MEPI has and will continue to add to the number of health workers trained in Sub-Sahara Africa. Scaling up the health profession education should take into account the importance of an inadequate skill mix and recognition of other cadres. This is important and it is one of the major thrusts taken up by the African forum for Research and Education in Health (AFREhealth) which is new multidisciplinary organization that has been formed out of MEPI and NEPI (Authors are members of AFREhealth). This new organization is committed to developing public health professional education and research in Africa, sharing best practices, and reducing health disparities building on the MEPI work (Omaswa, Kigali-Malwadde, Donkor, Hakim, Derbew and Baird, 2018).

Box 3: The Nursing Education Partnership Initiative (NEPI)

1	The nursing education partnership initiative (NEPI) will invest significant resources over five years to expand clinical capacity in African nursery schools by developing innovative models of education that have real potential for success on a large scale
2	NEPI represents a major collaboration involving the PEPFAR partners' agencies – the Health Resources and Services Administration (HRSA), the US agency for International Development (USAID) and the PEPFAR country teams. External partners are WHO, the Clinton Health Access Initiative and the Columbia University International Centre for AIDS Care and Treatment Programmes
3	The first phase of the initiative will be to gather in-depth information through country wide assessment of nurse training capacity and needs in these pilot countries (Lesotho, Malawi and Zambia)
4	The information gathered in these assessments will assist the Ministry of Health and other country stakeholders to identify nursing schools to receive support to develop, expand or enhance innovative models of nursing education.
5	The expectation is that these institutions will serve as a model for transforming nursing education in their countries and other PEPEFAR countries
6	The capacity and needs of nurse training institutions across a wider group of countries will also be surveyed. The information gathered through the assessment and the survey will contribute to the evidence base that is being constructed in collaboration with WHO for the purpose of developing policy guidance for sealing up medical, and nursing education
7	Further details on MEPI and NEPI: https://www.fic.nih.gov/programs/training-grants/mcpi/index-htm (2010)

Source: WHO, Scaling up Nursing and Medical Education

Ethical Issues in Public Health Education

Ethics is a major area of philosophy that deals with the study of morality. Praticising ethical behaviours provides a standard for performance in any profession including public health education. Ethical conduct is particularly important for health educators, since they are working with a mission to serve the individual. The basic ethical principles in health can be summarized as follows:

a) **The Principle of Autonomy:** In the context of public health education, this means that the relationship between health extension worker and community member is based on a respect for him/her as a person and with individual rights. Such rights are;
   1 The right to information
   2 The right to privacy to primary confidentiality
   3 The right to appropriate case and treatment

b) **Beneficence (doing good):** Beneficence means doing or promoting good as well as preventing, removing and avoiding evil or harm e.g. providing information about emergency first aid to reduce the risks of HIV infection or accident

c) **Non- maleficence (doing no harm):** Non- maleficence holds a central position in the traditional medical ethics and guards against avoidable harm to subjects. It means non-infliction of harm to others, e. g. use of sterile needles

d) **Justice (Fairness):** This principles states that human beings should treat others human beings fairly and justly in distributing goodness and badness among them. It includes:
   1 Fair distributions of scarce resources
   2 Respect for individual and group rights
   3 Following morally acceptable

e) **The Principle of Honesty:** At the heart of any moral relationship, there is communication. A necessary component of any meaningful communication is telling the truth, being honest.

Public health professionals as health educators assume profound responsibility in using educational processes to promote health and influence human well-being. They are also responsible for the implementation of health educators' programme. Ethical standards that guide these processes must reflect the right of individuals and communicators to make decision affecting their lives.

Box 4: Nigeria Public Health Workers: Hippocrates or Hypocrites?

1	The Hippocrates Oath is the ethical code attributed to the ancient Greek physician Hippocrates (400BC) and adopted as a guide to conduct the public health practitioners
2	In the oath, the public health worker pledge to prescribe only beneficial treatments according to his/her activities and judgment; to refrain from causing harm or hurt; and to live an exemplary personal and professional life.
3	Do Nigerian public health workers still abide by the tenets of these ethical standards? Have they turned bad?
4	Do the activities of Nigeria public health workers now dangerous to the society? Have they become hypocrites pretending to be true to the Hippocrates oath? Are we asking the right question s and are there any appropriate solutions?

Source: Adekola(undated)

Mentorship Training and Skill Development in Health Research
The importance of effective mentorship in the development, success, and retention of health trainees and early career investigators in academic research setting is increasingly recognized. For example, early career faculty in institutions with strong

mentoring programmes demonstrates greater research productivity than faculty in institutions without such programmes. Standardized mentoring support programmes can triple the success of junior faculty in terms of typical metrics (e.g. grants and articles) of academic performance. Successful mentoring programmes, however, require skilled mentors.

Robust mentorship training programmes geared specifically toward training mentors in the skill and practices that cultivate effective mentoring with early stage investigators could improve the depth and success of the low-middle-income countries global health academic workforce.

What does great mentorship entails? Katz and Glass (2019) of the Fogarty programmes proposed some consistent requirements for success: First, an institution must provide protected time for its staff to devote to preparing for and providing mentorship to junior members. It should recognize the importance of mentorship by providing mentorship training opportunities and making it part of faculty evaluations, so mentors can receive credit for their efforts. Second, the mentor should encourage mentees to question the status quo, propose innovative approaches, and engage in scientific debates with more senior scientists, something that is not always part of the academic culture in underdeveloped countries institutions. This will allow for bidirectional learning, which benefits both parties and may inspire novel research approaches. Third, the mentees should be given an ethical framework to foster research integrity and the opportunity to learn by doing, to direct their own research, and to experience their own successes and failures. But a good mentor knows when to step in to provide guidance that can prevent frustration that can lead to burnout. Finally, mentors should cultivate writing skills among mentees so that they can publish their results and generate fundable research proposals. In some low resource settings, there is a shortage of qualified mentors. In those circumstances, peer mentoring can be a viable solution.

We believe well trained scientists are the key to solving the most difficult global health challenges, ensuring health security from disease threats including CONVID-19 (the coronavirus) and improving access to care especially for those in low-and middle-income countries (LMIC). Today's complex health challenges require multidisciplinary approaches and team science, with investigators who are equipped with sophisticated data analysis skills, expertise in ethical research and other advanced capabilities and skills. Research mentors should have technical expertise in

all aspects of the responsible conduct of research, including grant proposal writing, study design, data collection, analysis, the dissemination of results, and policy engagement to ensure that the results are translated into policy or practice. While a general understanding of the attributes of a successful mentor is known, there is limited information on the competencies required for effective health research mentorship, especially in developing countries (Abedin et al., 2013). Accordingly, these countries share common challenges of complex disease burdens, skill shortages, underinvestment in research and resource constraints.

Competencies are defined as specific skills, techniques, attributes and knowledge that mentors can develop through training, education, and experience (Johnson, 2003). Mentoring competencies include knowledge and skill in the structure and process of the mentoring relation, ability to cope with the challenges arising with a mentoring relationship, and an understanding of the role and responsibilities of the mentoring relationship. Defining competencies for mentoring in a healthcare context is important for several reasons: providing opportunities to define skill set required for effective mentoring in developing countries, determining the training needed for local research mentors and advocating for resources, institutional development of guidelines, and support for mentoring for basic, clinical, and/or public health research. The health research competencies and skills are provided by Hamer et al., (2019) as follows:

1. Maintaining effective communication
2. Aligning expectations with reasonable goals and objectives
3. Assessing and providing skills and knowledge necessary for success
4. Addressing diversity
5. Fostering independence
6. Promoting professional development
7. Promoting professional integrity and ethical conduct
8. Overcoming resource limitation and other sources of adversity
9. Fostering institutional change

In "mentoring the mentors", Ghandi et al. (2019) spelt out the training areas and specific topics to be covered. The training areas and specific topics are adumbrated as follows:

1. Emotional intelligence< knowing your own and others' personality styles and how to work together; mindfulness>

2. Communication <Giving and receiving feedback, dealing with professional conflict, setting expectations and distance monitoring>
3. Professional skill< time management, individual development plans and mentoring tools/resources, life-work balance, team science and negotiation>
4. Diversity< micro aggressions, unconsciousness bias>

Mentoring is mutually beneficial to mentors and mentees, as well as their institutions, and it is critical to mentee development to create the expected general leaders. The mentoring competencies listed herein will assist mentors and institutions to stay up to date with global health knowledge, sharpen their cognitive skills, and enhance both professional and personal growth and job satisfaction. Again, the competencies will enhance the skills and experience of mentees and encourage them to generate or advance knowledge for the benefit of the health of population in developing world.

Conclusion
The paper examined public health education and skill training, with a view of identifying some critical issues of discussions. To present the points as simple and as straightforward devoid of ambiguity and unnecessary elucidation, tables, charts and boxes were descriptively and analytical utilized. Important observations were made: health education and health promotion have multiple influences from several disciplines- biological sciences, behavioural sciences, economics, political science and other social sciences. Key important concepts in public health education and training are: health education, health literacy, health behavior, health promotion, health communication and health were discussed and implications to public health education highlighted. Strategies to improve health literacy are important empowerment tools which have the potential to reduce health inequalities. Medical Educators Partnership (MEPI) and Nursing Education Partnership Initiative (NEPI), two of Africa's health workforce development initiatives were also discussed, the prospects and challenges made base. The five ethical consideration in public health education were discussed. It was pointed out that public health educators assume profound responsibility in using educational process to promote health and influence human well-being. One of the outstanding ethical standards is the Hippocratic Oath. But the question in simply that of hypocrites' oath in the sense that public health workers have not lived up to the hypocrates oath.

Mentoring is mutually beneficial to mentors and mentees, as well as their institutions, and it is critical to mentee development to create the expected general leaders. The

mentoring competencies listed herein will assist mentors and institutions to stay up to date with global health knowledge, sharpen their cognitive skills, and enhance both professional and personal growth and job satisfaction. Again, the competencies will enhance the skills and experience of mentees and encourage them to generate or advance knowledge for the benefit of the health of population in developing world.

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CHAPTER 6

The Dynamics of Learning and Teaching Methods in the Built Environmental Disciplines of University Education

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Abstract

The study essentially discusses the roles and skills of teachers in achieving effective teaching experience and impacting learning on students. The objectives of the study are**:** first, to examine the role of teachers and students in learning and teaching; second, to identify and examine the existing methods in environmental disciplines; third, to examine the pedagogy effectiveness in the built environmental disciplines. From the body of literature and researchers' perspectives, the reviewed literature has helped to identifying and examining the challenges of the 21st century teachers in the carrying out of their duties. The method employed in study process was wheeled by a mixed approach, comprises of - action and historical-interpretive researches which entail the identification and use of specific procedure to access the object under study. The data gathering involves the collation of existing courses in a particular area of study (built environment professional disciplines) which were elements of analysis for their validity for efficiency and adequacy. Findings through observation and review carried out on the core courses in the built environmental disciplines revealed some inadequacies in the area of facilities and teaching aids provision. The critical review of literature further shown that, many of the so called teachers or lecturers are not absolutely qualified to carry on with teaching

business until certain measures are addressed. The work investigation concluded that University teachers should be trained and retrained again for a better outcome of the system. And they must begin to lay emphasis on monitoring and mentoring both students and junior faculty members to maximize their time in the university and thereby assisting them to reach their potentials.

Keywords: *Education, Teaching and Learning, Method, Built Environment, University*

Introduction

The entire world is dynamic in its two major dominating spheres – the lithosphere and hydrosphere. The former happens to be the habitat of humans' domain, and where knowledge of skills acquisition is a must for the purpose of enhancing human and materials development. Agreeably, only an infinitesimal percentage of world population possesses distinct gifts in one area or the other, which would not require absolutely the third party to beef up. The larger percentage acquired specific knowledge and skills through either formal or informal education. For many centuries the world had recognised the formal medium – through some established platforms or institutions as a better way of achieving development. One of the characteristics of this is that it is sustainable; besides, it usually issues certificates of attendance to the participants for the period of training which may be short or long. Abilities themselves are learned, and rarely inborn. In almost every case it is possible to be taught the necessary skills, and where abilities are weak they can nearly always be developed (Heller and Hindle, 1998).

At Stone Age, human species at best were just discovering themselves to adapt to their environment and subsequently had improved on their skills mainly in the area of food procurement – through hunting, domestication and indeed agricultural practices. For a long period of time as the world gets more civilized there were urgent needs for skillful hands to impart knowledge in relevant areas of humans' exigencies. History reveals that the major intellectual accomplishments of the High Middle Ages (period covering 12th – 15th centuries) were of four related but different sorts: the expansion of primary education and lay literacy; the origin and spread of university; the acquisition of classical and religious knowledge; and the development of new philosophical and theological idea. Any one of these accomplishments would have earned the High Middle Ages a signal place in the history of western learning. Taken together, they mark the beginning of an era in the intellectual history of Europe that would last until the scientific revolution of the seventeen century (Coffin and Stacey, 2005).

Africa lays claim to being the cradle of human civilization but nothing to show for it among today's innovations except the remains of earliest human being found in Africa. There are existence of intensive agricultural schemes, metallurgy, including the mining and smelting of copper, practiced in Africa as far back as 4000 B.C.; and the system of hieroglyphic writing and the papyrus (Okebukola, 2006). In retrospect the early institutions that played these roles were recognized for their initiative, philosophical orientations thereby helping to lead the skill acquiring institutions to today's hallmarks of innovation. This tasks expectation becomes validated about one hundred and fifty years ago when John Henry Newman succinctly described University as:

> A *place of concourse, whither students come from every quarters for every kind of knowledge.....It is a place where enquiry is pushed forward, and discoveries verified and perfected, and rashness rendered innocuous, and error exposed, by the collision of mind with mind, and knowledge with knowledge. It is the place where the Professor becomes eloquent, and is missionary and a preacher, displaying his science in its most complete, and most winning form...It is the seat of wisdom, a light of the world , a minister of the faith, Alma Mater of the rising generation."*
> (Quoted in Obayan, et al 2012)

In 1915 it was told that the America Association of Professors came up with a proclamation that: All true Universities, whether public or private, are public trusts designed to advance by safeguarding of free inquiry of impartial teachers and scholars. Their independence is essentially because the University provides knowledge not only to its students, but also to the public agency in need of expert guidance and the general society in need of general knowledge. It is against this background that the subject matter under discussion was explored to weave in the various strands of skills acquisition, especially through teaching. The main discourse on this skills acquisition narrative should enable us in the academic field to distill the fundamental pillars and rubrics of what a typical academic institution must represent. It also provided us with a unique opportunity to make our contribution as a University to the ever-evolving context of the representation of a university in contemporary times (Obayan, et al, 2012)

Higher or tertiary education especially the University is today the most recognized as academic institutional hierarchy to obtaining valued knowledge and skills. A University has been described as a place where solutions to societal problems are found and value added to humanity. The study of teaching or instructional skills in all levels of education is concerned with issues ranging as far and wide as a logical process, including administrative and instructional capabilities. The global educational planning for all times had needed some inputs in real instructional planning, research design, assessment and 'student learning readiness and academic achievement.' (Martinez-Pons, 2003). At this auspicious time, African Institutions must continually seek the best agenda on issues that affect the continent in respect to education – best of teachers, facilities, sound teaching aids and competent research managers. This study is expected to help to improve the teaching management and administration skills of university leaders, and transfer of knowledge and innovation to their numerous students. In addition it aims at achieving wholesome transforming core skills in teaching methods with view to prepare students for better living. The January 2020 edition of the University World News has affirmed that the three missions of Universities in Europe border on learning and teaching, research and knowledge transfer, in this current global world, this can not but to continue finding expression in African national educational pedagogy.

The objectives of this study are to: examine the role of teachers and students in learning and teaching; identify and examine the existing methods in environmental disciplines; identify and examine the challenges of teachers in the carrying out of their duties. All these pedogogical features (objectives) are to a greater extent expressed topically as subsections under the literature review.

Literature Review and Theoretical Discourse
The sub-theme of this chapter is learning and teaching method as it relates to the disciplines in the built environments or environmental sciences. It is however, needful to unveil the conceptual meaning of what these terms (learning, teaching, method and environment) means. First, it is imperative to know that both 'learning and teaching' are beds of the same fellow with intimate relationship. While teaching is seen as something taught by a philosophical or religious authority on one hand , it is also being considered as the profession of educating people; of a teacher (Oxford and Longman Contemporary English dictionary), Learning, simply is an act in which something is learned especially through the act of teaching or training. By interpretation learning is an end product of teaching as the learner appropriates the

teaching into knowledge. This also can be experienced through reading or study. Teaching can be an end in itself. Learning to learn develops the mind and objectivity (Heller and Hindle, 1998). It is useful as well, in terms of personal development, offering a sense of growth.

Dictionary definitions of method include number of keys word such as procedure, systematic or orderly arrangement together with the idea of a clearly defined goal as an end product. The *shorter Oxford English Dictionary* defines method as 'procedure for attaining an object, a special form of procedure adapted in any branch of mental activity', or a way of doing anything especially according to a regular plan (e.g. teaching). The American Heritage Dictionary defines method more simply as: The procedures and techniques characteristics of a particular discipline or field of knowledge –the method. Clearly, method, as articulated here includes concepts such as procedures, objective and plan.

Environment can be defined as the circumstances and conditions that surrounds an organism or group of organisms, or the social and cultural conditions that affect an individual or community (Curringham, 2010). There is no single and general definition of the environment as they vary in opinions and ideas of different professionals. Environment is the sum total of water, air and land interrelationships among themselves and also with the human being, other living organisms and property; the term "environment" could be said to cover all those elements which in their complex inter-relationships form the framework, setting and living conditions for mankind, by their very existence or by virtue of their impact (Larsson, 2009). Environment maybe defined differently depending upon the perspective of the definer. Environment is usually considered to constitute three main subsystems:

   a. Physical Environment (geology, topography, climate, water, air)
   b. Biological Environment (terrestrial and aquatic communities, rare and endangered species, sensitive habitats, significant natural sites)
   c. Socio-cultural Environment (population, land use, development activities, goods and services, public health, recreation, cultural properties, customs, aspirations).

This chapter focuses on the socio-cultural sphere of the built environment essentially, upon which the disciplines of architecture, urban planning, estate management, building technology, quantity survey and land surveying rest. The six courses of study are major determinants of how the built environment in the villages, peri-urbans,

towns and cities function. Well-designed buildings, streets, neighborhoods and districts are essential for successful social, economic and environmental regeneration (Urban task force, 1999). Urban environment entails the interaction of population, health, economic growth, urban structures and the built environment with the natural environment or ecological system in which a city is located.

Pedagogically, the 21st century era should have greater advantages than the previous centuries because of the engagement of technology which hitherto has been beefed up in the existing tools of imparting knowledge. There are diverse educational preparations that are required prior to achieving specific goals or objectives. To buttress this for instance, Martinez-Pons (2003) has reiterated that the training of school teachers, leading to the Bachelor's or Master's degree is largely intended to prepare them to perform as practitioners of their craft, as well as to become critical consumers of information about their craft generated by scholars. By contrast, the training of university professors, with few exceptions leading to the doctorate degree, is meant largely to prepare them to perform scholarly work for the generation of new information. As it may have been observed, the dichotomy in the above description is the fact that their general educational preparations have implications for what schoolteachers and university professors do in the classroom.

In this era of competition and ardent desire for the best skill among potential job seekers coupled with the huge government and private investments on education, it is reasonable that the populace get the best of knowledge from the national academic institutions. To that extent, the teacher must be profiled to engage a good blend of his tools, depth of knowledge and inventiveness. His objectives and teaching methods must be worthwhile.

Teaching and Learning Methods in Built Environmental Education
The overarching concepts of environmental sciences and its curriculum have never been more exigent to the field of environmental science than it is today. Essentially, an instruction on management of one's environment is about the first learning curve in the human development process and growing into adulthood. Thus, 'Environmental education' is a process of developing awareness, positive attitudes, and a will to act in an appropriate manner towards the environment (Raven, et al., 2010). A teaching method comprises the principles and methods used by teachers to enable students learning. These principles are often determined partly on the subject matter to be taught and most of the time by the nature of the learner. Few of the methods are highlighted here, as follow:

Discussion Method or Classroom Teaching

Fundamentally, this method is a teaching strategy that is usually adopted to promote team work and develop critical thinking and analytical abilities, and positive attitudes among learners (the students). The environmental issues or problems to be discussed by the students could be presented through films or slide shows or explained by the teacher. By definition, discussion is an activity in which persons indulge in verbal interaction over a topic. As a purposeful activity, it involves consideration of the relationships in a topic/problem under study and these relationships are analysed, compared and evaluated to arrive at conclusions. There are different types or approaches to discussion namely**:** teacher discussion initiation (here the teacher provides a question that creates a genuine discussion among students, then lets them work together to discuss it; student initiated discussion; panel discussion and symposium approach.

The importance of discussion method includes: quick understanding of the issue or question being raised; help to provoke reaction or response to the views/ideas of others; it ensures a thorough guided participation and orderly learning; the communicated views/ideas are often supported with reasons; unhindered expression of individual opinions, ideas or views; values are quickly clarified; supports evaluation of arguments and change one's own value position if this becomes necessary and it is endowed to help in identifying the alternatives for resolving an issue or a problem, etc.

Discussion could be initiated through: the teacher introducing a topic or a problem or situation; The students called to describe a scene or situation; ideas/views expressed in newspapers/periodicals; Films or videos tapes played as a forerunners; points arising from panel discussion, open forums and symposia. Table 1 shows four effective steps of expressing discussion teaching method.

Table 1: Steps for Using Discussion

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┌─────────────────────────────────────────────────────┐
│ Identification of the problem, outlining its          │
│ significance, scope And nature                        │
└─────────────────────────────────────────────────────┘
                        │
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┌─────────────────────────────────────────────────────┐
│ Analysing the Problem through exchange of ideas and   │
│ Solutions                                             │
└─────────────────────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────────────────────┐
│ Arriving at Solution, Formulation of recommendations  │
│ or Resolution and drafting of the Report.             │
└─────────────────────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────────────────────┐
│ Finalizing the report, Sharing and Effecting          │
│ modifications.                                        │
└─────────────────────────────────────────────────────┘
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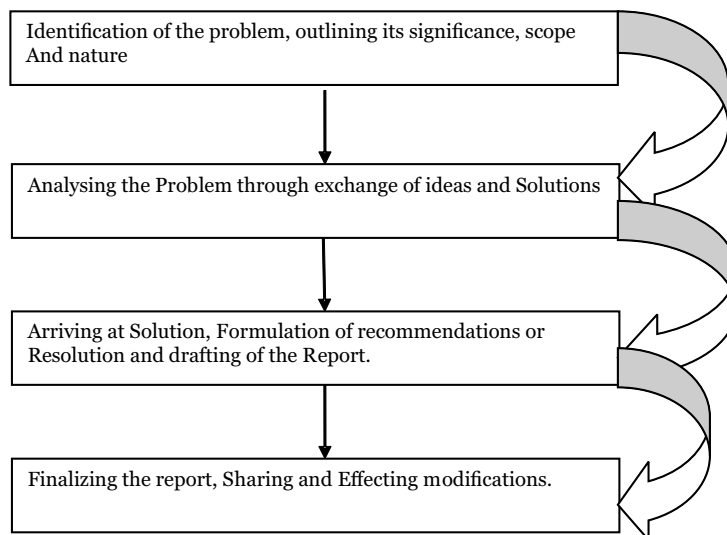
In all engagements, discussion could be effective through the following ways, viz **-s**timulating and sustaining the interest of the participants; stating the expected outcomes of the discussion; creating an atmosphere for freewheeling of ideas; clarifying doubts and asking for explanation if necessary; involving interpretation and avoiding arguments and providing scope for evaluating fact and points of views summarizing the details. Others observers have added effectiveness, such as: emphasising important points; honouring differences of opinion and students view and concluding the discussions in the various ideas /points discussed.

Demonstration Method

This is another useful teaching method employed in environmental education, especially through the laboratory or demonstration studio. Demonstration is an act of showing how something is to be done or not to be done. Through demonstration a teacher presents a task requiring some skill before the students; demonstrations are most effective when followed by a student-activity. For effective execution, demonstration method must follow the plan schedules, use teaching aids and articulate the 'Hands on' practice. The whole benefits lie on the facts that in the demonstration method - the teacher is present, it is full of ideas and concepts, step by step approach is followed. Quality of observation, practical intellectual and

communication, often presents reality and stimulates interest (catches students attention), it is a direct experience that makes several senses.

Project Method
According to Stevenson, the project method is a problematic act carried to completion in its natural setting. It is one of the methods employed for strengthening outdoor education studies. It usually involves investigation for learning about the environment and its problem. A project may include a series of related problems and could cover a small portion of the subject matter or a few units of the course. The project method of teaching builds a unit around an activity that is carried out in the school or outside. The principles of the project method usually include purpose, activity, utility, freedom, and feasibility. Project Method is characterized by the following, viz:

A Project contributes to stimulating interest, satisfying curiosity, developing scientific attitudes, critical thinking and scientific bent of mind; It helps increase one's confidence in the subject; It encourages independent investigation by learners and offers scope for involvement of the community and its resources; It may be carried out by students individually or in groups; Investigatory skills including observation are involved.; skill of arguing the view points is developed from the study; Collection of samples, information from several sources for arriving at conclusion or inferences and preparation of report, and the confidence needed to present information to the community and to approach the community and different agencies for information. Some of its steps may include but not limited to - providing a situation, choosing and purposing, planning, executing of project, evaluating of project, and recording the project activities.

Who should a teacher of 21st Century be like?
The pertinent question at this moment is 'who should be that teacher that will always impart skills on learners'? A great teacher really, may be seen as one who by his knowledge, character, and day-to-day life leaves the profoundest influence on the intellectual and moral character of his students. Biggs & Tang (2011) have said that the teachers' role is meant to ultimately provide learners with skills and knowledge that the students can apply succinctly to their functioning as adults, in the management of their lives, works and their participation in the societal decision-making process.

From the stand point of expectation, the roles of a Teacher should dwell around these:
1. Training students in planning, organizing and conducting similar discussions
2. Formulating a topic for discussion and delimiting its scope
3. Encouraging active participation from each member of the class
4. Creating an atmosphere for freewheeling of ideas/expressions
5. Ensuring orderliness - avoiding personality clashes and domination by any one student/group during discussion.

Roles of Teacher also have been anticipated in the following views:
1. He should provide occasion for every student to come forward and contribute something towards the success of the projects.
2. He should be alert all the time to see that the project is running on its right tracts.
3. He should study the abilities, interest, aptitudes, etc, of each student so as to allot them suitable works relating to the project.
4. He should always be a friend guide and working pattern.

Teachers Challenges
There are common challenges that have been identified by researchers in the recent past. Fast-tracking to the 21st century which ushered in unprecedented challenges in terms of the convergent impacts of globalization, the increasing importance of knowledge as principal driver of growth, and the ICT revolution. These include but not limited to qualification issue, condition of learning, and the imbalance in the teachers-students ratio, poor remuneration and teaching facilities, etc. in view of this state of educational sector, many countries have often marshaled out plans for reform-requiring a proper setting of national qualification framework to define learning outcome at various degree/levels with quality assurance system (Biggs and Tang, 2011)

Method Engaged in the Research
Basically, to achieve the goal of the chapter the title - 'Dynamism of Learning and Teaching Methods in the Built Environmental Disciplines of the University Education', it was imperative to select an institutional platform out of the various academic institutions – secondary, vocational, polytechnic, college or university. And having analysed other benefits in the choices using a concrete available evidence – e.g., numerous studies executed in the educational system at secondary level, and at the polytechnic level which is limited to technical skill acquisition, the only option is the

university institution, agreeably, the highest level of academic institution upon which the society embolden its hope.

Mixed research methods of action, historical-interpretive have been employed in this study, and this arises out of the social sciences relationship nature that the work entails. According to Groat and Wang (2002), 'action method' stepped from the socialist Kurt Lewin's notion of Field theory, which posits that both theoretical and practical knowledge must inform each other in a concrete context for the establishment of a true domain (field) of endeavour (Kurtis, 1976). The term 'action' denotes the actual need in the teaching profession to solve the problem arising out of practical life-context. For example, designing an interactive activity is a particular instance of reflection -in-action. Typically, the study seeks for patterns within context-specific design relating to the interaction between instructor and students in either in the studio or lecture room and its effect on the design outcome. What results is a product that is the sum of the reflective action taking in response to the factors unique to the concrete context. In that regard the study also combines the historical research with interpretive research (interpretive-historical research) in order to assess evidence from the past experiences of teachers. From the epistemological point of view, this involves acting as lenses through which past condition are interpreted. Tactically, it helps to facilitate fact-findings, fact-evaluation, fact-organisation, and fact-analysis process. It entails being aware of different kind of judgments that can be made once enough evidences have been gathered.

Table 2: Teaching Methods used in College of Environmental Sciences Programmes

Programme	Course Code	Course Title	Status	Method Employed
Architecture	ARC105	Introduction to Architecture	C	Lecture
	ARC211	Introduction to Model Making	R	Practical
	ARC231	Architectural Graphics	C	Practical
	ARC307	Computer Aided Design for Architects	C	Practical
	ARC313	Architectural Components and Methods	C	Lecture
	ARC309	Architectural Form and Structures	C	Lecture
	ARC402	Architectural Design Studio	C	Practical
Building Technology	BDT103	Introduction to Building	C	Lecture
	BDT201	Building Construction and Materials	C	Lecture
	BDT301	Structural Analysis	C	Lecture
	BDT407	Building Economics	C	Lecture
	BDT501	Advanced Construction Techniques	C	Lecture
Urban and Regional Planning	URP102	Introduction to Urban Planning	C	Lecture
	URP201	Planning Studio	C	Practical
	URP305	Regulation Development Planning	C	Lecture
	URP306	Public Utilities and Services Planning	C	Lecture
	URP403	Urban Design	C	Lecture
	URP503	Planning Seminar	C	Practical
	URP508	Project Dissertation	C	Lecture
Quantity Surveying	QTS101	Introduction to Quantity Surveying	C	Lecture
	QTS201	Measurement and Description	C	Lecture
	QTS205	Construction Economics	C	Lecture
	QTS306	Building Development and Economics	C	Lecture
	QTS413	Advance Estimating	C	Lecture
	QTS502	Procurement Management	C	Lecture
Estate Management	EST101	Introduction to Estate Management	C	Lecture
	EST207	Land Economics	C	Lecture
	EST301	Principles of Valuation	C	Lecture
	EST403	Principles of Property	C	Lecture
	EST405	Estate Development and Finance	C	Lecture
	EST501	Advance Valuation	C	Lecture
Surveying and Geo-Informatics	SGF102	Introduction to Basic Surveying	C	Lecture
	SGF202	Engineering Surveying	C	Lecture
	SGF401	Cadastral Surveying	C	Lecture
	SGF303	Photogrammetry	C	Lecture
	SGF511	Survey Laws and Regulations	C	Lecture

Source: Students Information Handbook 2019/2020, College of Env. Sciences, BU of Tech.

Discussion of Issues and Methods in Built Environmental Disciplines

Learning in environmental science is a challenging endeavour in spite of its necessity for both livability and professional expediency. Be that at it may, a well-developed pedagogical plan that facilitates student mastery of the courses shown in Table 2 have

always been a hallmark of built environment. Distinctly, Table 2 depicts few selected core and well-coded courses from the six programs that constitute the professional based 'environmental sciences' (a term articulated here as 'the built environmental disciplines'). They include Architecture, Building Technology, Urban and Regional Planning, Estate Management, Quantity Surveying and Surveying and Geo-Informatics. From the courses displayed, it is quite obvious that various methods of teaching would be engaged across the different courses and level status. The focus of each discipline demands that the right method of the learning skill is applied for the purpose of students' good understanding. In this section, it is pertinent to centre discussion on the effectiveness and adequatcy of the courses depicted in Table 2, characteristically endued to preparing students for the envisioned professional practitioners.

Architecture deals principally with buildings design, thus lecturers tend to teach the graphics skill thereby imparting the same to the students with all passion and zest. The actual training of the use of Architectural graphics skill should have commenced at the pre-tertiary level in the subject called technical drawing, a fundamental requirement for adminision into the program. Architectural Graphics (ARC201) at this level of learning help to impart good knowledge of architectural drawing skills to the students after being exposed to basic drawing of objects at a lower level in a course called introduction to architecture (ARC 105).

Again urban design as a course becomes very imperative in the fields of urban planning and architecture. The course is a blend for the two disciplines and could be an area of specialization at postgraduate level in either architecture or urban planning. Urban design method is an iterative process and cyclical in nature. It has much in common with general planning method which was for sometimes based on Geddes' dictum: *survey and plan* (Moughtin, et al (2007). The urban design method that is expressed in the environmental field mirror the planning process with which it has so much in common. It often manifest strongly as a linear presentation of material. Students are exposed to the simple progression technique that it involves - starting with goal formation and ending with technique of implementation. The logical arrangement of courses for learning process is strategic. This helps students to absorb and assimilate the contents of what is being imparted at the starting point. For instant, the very first courses across the six disciplines is coded 'introduction to' the core courses, including Architecture (ARC 105); Urban and Regional planning (URP102); Estate Management (EST 101); Building Technology (BDT 101); Introduction to Basic

Surveying (SGF102), etc. Essentially, all core courses at 100 levels in each of environmental disciplines are fundamental to students' esablishment in the programs. This also goes for courses from outside the departments which are programmed to build the students' skills.

It is needful to emphasis the importance of resources materials for teaching-learning in the built environmental fields. There are many teaching aids -'Resource or Instructional Materials' that have been profitably used across most built environment courses by teachers (lecturers) to carry out their teaching and learning activities or for the purpose of imparting knowledge to students. The frequency of use and costs of the materials make programs like Architecture and Urban and Regional Planning that use Models and do designs or plan making to incur additional cost in the study. More often than not, lecturers can improvise where certain materials are not available to go round for instruction purpose. At any rate, as it is being affirmed by others that: the ultimate end of their use is the improvement of teaching process and achievement of the expected learning of teaching outcomes (Nyamibo, 2004; Dogo, 2009)

Models making (as emphsised in Arc 211 course), is one major use that the instructional materials are being engaged. For the purpose of clarity, a model is simply an art work that is made to represent the actual object or its image. The entire spatial space can also be modeled, although, this calls for a rigorous task to procuring all required materials which can help to achieve high level of precision in that regards. The course, Arc 211 –Introduction to model making is by status a required course for all 200 level students across the departments that constitute the faculty/college. Demonstration method of teaching has often been employed in the teaching of the course, and then coupled with 'Do-it-Yourself' approach. Invariably, the very expected knowledge skills have been imparted upon the students. In addition, field work experience; seminar/term paper presentation; and final research project work are to enhance the overall learning and skill impartation.

The challenge in all of this is not in anyway related to lack of human resource to teach but the crux of the matter is the inadequacy of the true professional or visionary who will combine teaching with vision. Beyond the certificate qualifications, there must be a way of solving the problem of who should teach, separating those that are skillfully endowed to teach from the uncalled ones who perhaps are superficially competent. In their findings on how to improve teaching towards learning outcomes, Biggs and Tang (2011) have identified most important two ways to achieving these as follow:

First, recognizing that teaching is a more a function of institution -wide infrastructure as it is a gift with which some lucky academics are born. Thus, policies and procedures that encourage good teaching and assessment across the whole institution need to be put in place. Second, shifting the focus from the teacher to the learner, and specifically, to define what learning outcomes students are meant to achieve when teachers address the topics they are meant to teach. Biggs and Tang (2011) have helped us to know the importance of outcomes-based teaching and learning that graduates of university can achieved. Putting this in perspective Angelo and Cross (1999) whose study was carried out when many institutions did not spell out mission statements have identified six goals clusters that teachers should address or align with. These are - higher order thinking skills, basic academic success skills, discipline-specific knowledge and skills, liberal arts and academic values, work and career development and finally, personal development.

Conclusion

In this chapter we have x-rayed clearly certain components of teaching methods in the built environmental disciplines with a whole emphasis on the most environmental education teaching methods such as discussion method (or lecturing), demonstration method, and project method. Discussion (lecturing) method which seemed to dominate other is a teaching strategy that is generally adopted to promote team work, and to develop critical thinking. In addition, the approach is meant to beef up the analytical abilities, and positive attitudes among learners (the students). It is the submission of this chapter that a more pragmatic step be taken by government through the university education regulating body, to review many policies compassing the whole set up of qualifications of teachers. It should not just be an 'all-comers' affairs. University teachers should be trained and retraining again for a better outcome of the system. Universities must begin to lay emphasis on monitoring and mentoring both students and junior faculty members to maximize their time in the university and reach their potentials.

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CHAPTER 7

Utilizing Item Analysis and Reliability to Evaluate a Lecturer-Developed Test in Educational Measurement and Evaluation

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Abstract

Item analysis is essentially significant in improving items that would be used again in future testing. It is also used in eliminating, revising or re-modifying misleading or defective items. This study was designed to assess psychometric quality and explored the relationship between Difficulty Index (p-value) and Discrimination Index (d-value) with Distractor Efficiency (DE). Five research questions were formulated to guide the study. The research was conducted among 311 Final year degree B.Tech Education students at Kaduna Polytechnic, Kaduna, Nigeria. Sixty multiple choice items were administered as an end of semester Examination in Educational Measurement and Evaluation. The tool internal consistency reliability was .822 computed via Cronbach alpha technique. The Mean score was 31.67 with a standard deviation of 7.83. Mean difficulty index (p-value) and (d-value) were 0.52 and 0.24 respectively. The majority of the items 43 could be observed to be at optimal range between 40-60% as recommended. In conclusion, good items having average difficulty and high discriminating power with functional distractors should be retained and kept in question bank for future use in order to improve and enhance quality of the assessment and provide testing practice for the lecturers.

Keywords: *Item difficulty, Item discrimination, Correlation, Item Analysis, Evaluation*

Introduction

Teachers and lecturers at all level of education often do prepare, construct and administer many formal Teacher-Made Tests (TMTs) during the academic semester or year. There are varieties of tools for assessing the students during pedagogy, but test seems the most indispensable and frequently used tool in the educational enterprise. Judicious adherence to the basic principles of test construction, test administration and scoring as well as interpretation and reporting is very essential, especially when Norm-referenced tests (NRTs) are constructed in order to achieve instructional purposes. It is pertinent to ask that to what extent are teacher-made tests reliable and valid? In Nigeria, the National Policy on Education (2004:3) section 1, 8(a) specified that "educational assessment and evaluation shall be liberalized by them being based in whole or in part on continuous assessment of the progress of the individual". Similarly, section 8(b.72) specified that all teachers in educational institutions shall be professionally trained.

Thus, this makes it imperative for teachers and lecturers to be well versed and grounded in testing and evaluation techniques, strategies and tactics in order to enable them to validly and reliably evaluate students' progress. It is a fact that almost all tertiary educational institutions in Nigeria (be it University, Polytechnics, Colleges of Education) had stipulated that students performance learned be based on continuous assessment and semester examinations. However, some test principles and practice in form of item and test analyses are not frequently used in teacher-made classroom assessments. It is an axiomatic fact that the two common testing formats utilized are essay and objective tests. Frequently used objective tests are multiple-choice, matching, short-response items. In Nigeria, essay items are becoming infrequently used (even in tertiary institutions of learning) due to increasing number of students. In fact with the availability and utilization of ICT, some institutions are turning to Computer-Based Testing (CBT). Hence, Multiple-Choice Questions (MCQs) and short answer items formats are becoming the most preferred or suitable options. Already, it was the normal practice to use MCQs in our faculties of Medicine and Natural Sciences. Preparing and constructing MCQs to assess student's knowledge and academic achievement comprehensively during or at the end of a semester is a time-consuming and complex process. Tests play an important role in providing variety of information, including feedback to teachers on their educational actions and decisions; therefore, the quality of the teacher-made test is of crucial issue that deserves serious attention and effort in all its ramification. Haven administered and scored a test, a lecturer needs to know and understand how good the test items are

and whether they are able to reflect the anticipated students achievements or performance in the course in relation to the specific learning objectives taught over the period.

There are several ways in which lecturers use educational evaluation and assessment. Quaigran and Arhin (2017) citing Popham (2008) reiterates that teachers utilize assessment in order "to understand student's prowess at the learning outcomes, whether it is cognitive, affective or psychomotor" (p.256). Adjustment can, and should be made to the instruction given to students based on assessments. These include modifications based on students needs, pace of instruction, coverage of course materials, and developing a more effective and comfortable classroom learning environment. Buttressing further, Xu and Liu (2009) posit that teacher's knowledge in assessment and evaluation is not a static process but rather a complex, dynamic and ongoing activity. Thus, the researchers allude to the need for classroom teachers and lecturers to constantly update their knowledge regarding assessment practices.

Conceptual Clarifications

Test with (MCQs) and analyzing their options have become the choice of many examiners in tertiary institutions used widely to assess students. A typical MCQ consist of a question or an incomplete statement referred to as the stem and a set of two or more options that consist of possible answers to the question. Nandeo and Sahoo (2016) expressed that, there are three (3) compounds of a MCQ, direction (instruction to the students), stem (the questions) and choices (alternatives). The correct alternative is called the answer (key) and other alternatives are called distractors. The student task is to select the one option that provides the best answer to the question posed. Only one option should have unequivocally correct and distractors should be unequivocally wrong. It is relatively difficult to construct MCQs, especially creating good distractors. It is an obvious fact that constructing MCQs is not a simple process, but it becomes very intricate searching for distractors that are plausible. In fact, the appropriate quality of MCQ is based on the availability of distractors. A good distractor should be able to discriminate between the more knowledgeable and the less knowledgeable students.

Ease of scoring can make multiple choices testing particularly appealing to teachers who teach courses with large number of student's enrolments. Another advantage is that a well-constructed MC test can yield test scores at least as reliable as those produced by a constructed-response test, while also allowing for a large portion of the

topics covered in a course to be assessed in a short period of time (Becon, 2003). Well-designed and written MC items can serve to assess higher level of cognitive processes, although creating such items does require more skills than writing memory-based items (Buckies and Siegfried, 2006; Palmer and Deviff. 2007). Similarly, a lot of effort and time is required to construct good quality MCQs as compared with essay questions. This is possible if the test constructor follows rigidly the numerous guidelines for writing MCQs. It is imperative to mention at this juncture that, however MC items are often criticized for focusing on what students can remember and do not assess student's abilities to apply and analyze course-related information (Walsh and Seldomridge, 2006). Another criticism according to Quaigrain et al., (2017) is that the format of MCQs enable students guess even when they have no substantive knowledge of the topic under consideration. However, Downing (2003) points out that blind guessing is quite uncommon on well-written classroom tests and informed guessing which is based on a critical consideration of the question and the available options, provides a valid measure of student achievement.

Concept of Item Analysis

One major concern in the construction of MCQs for examination is the reliability of the test scores. Supporting this assertion, Bichi (2013) concurred that the most important characteristics of an achievement test used in assessing students abilities are its reliability and content validity. Suruchi and Rana (2014) posit that for a test to be reliable and valid, a systematic selection of test items with regards to subject content and degree of difficulty is necessary. However, the systematic selection of test items is a function of item analysis, which is usually done after the administration and scoring of the preliminary draft of the test on the selected samples. Good MCQs are those subjected to a rigorous process of item analysis. Item Analysis had been defined by various researchers. Quaigran et al., (2017) viewed it as a process of collecting, summarizing and using information from student's response to assess the quality of the test items. Bichi (2013) citing Shakel (2008) further explained it as a process which examines students responses to individual test items in order to assess the quality of those items as well as the quality of the test as a whole. Meheshwari and Meheshwari (2011) posit that item analysis is the process of "testing the item" to ascertain specifically whether the item is functioning properly in measuring what the entire test is measuring. It provides information concerning how well each item in the test functions. Item analysis allows us to observe the characteristics of a particular item and can be used to ensure that items are on an appropriate standard for inclusion in a test or also that the items need improvement or be discarded.

Generally, the process of item analysis works best when class sizes exceed 50 students. In such cases, item analysis can help in identifying potential mistakes, ambiguous items and alternatives' (distractors) that don't work (Sudha and Janardan 2014). Sudha and Janardan had identified the following as advantages of item analysis:

1. It is a powerful technique available to instructors for the guidance and improvement of instruction.
2. It is statistical technique to identify the effectiveness of the test.
3. It is a valid measure of instructional objectives and serves as a diagnostic tool.
4. It identifies the content areas that may be problematic for students.
5. It facilities the creation of Question Bank.
6. It helps in ranking students.

Two disadvantages mentioned are that it requires a constant and consistent effort of the teachers and that it is time consuming in creating. Gronlund (1988) posit that item analysis allow us to observe the item characteristics and to improve the quality of the test. Item revision allows us to identify item too difficult or too easy, items not able to differentiate between students who have learned the content, and those who have not or questions that have distractors which are not plausible. In this wise, teachers can remove these non-discriminating items from the pool of items or change the items or modify teaching to correcting any misunderstanding about the content or adjust the way they teach. The present study therefore was designed to assess item and test quality and to explore the correlation between difficulty and discrimination indices with distraction functional/efficiency.

1. Item Difficulty (p-value)

In psychometric analysis of MCQs, item difficulty is the first parameter to be determined. Item difficulty may be defined as the proportion of the examinees/candidates that marked the item correctly. In other words, it is the measure of the proportion of students/subjects who have answered an item correctly (Boopathiraj and Chellemani, 2013; Joshua, 2010). It is otherwise called p-value. According to Hotiu (2006), the p (proportion) value ranged from 0 to 1. When multiplied by 100, p-value converts to a percentage which then implies the percentage of students who got the item correct. Hence, the item difficulty is converted as a percentage of the total number of correct responses to the test items. The p-value or Difficulty Index (DI) is calculated using the formula $P = R/T$, where p is the item difficulty index, R is the number of the correct responses and T is the total number of responses/candidates (which include both correct and incorrect responses). This

means the range is from 0% to 100%, the higher the value, the easier the item. Those with a p-value between 20 and 90% are considered as good and acceptable. Among these items with p-values between 40 and 60% are considered excellent because DI is maximum at this range (Quaigran, et al., 2017).

Item with p-values less than 20% (too difficult) and more than 90% (too easy) are not acceptable and need modification. Optimum difficulty level is 50% for maximum discrimination between high and low achievers (Boopathiraj et al., 2013). In addition, in the words of Quaigran et al., (2017), a p-value is basically a behavioral measure when conceptualized. Thus, instead of explaining difficulty in terms of some intrinsic characteristics of the item, difficulty is defined in terms of relative frequency with which those taking the test choose/select the correct response (Thorndike, Cunninmgham, Thorndike and Hagen, 1991). Generally, items of moderate difficulty are to be preferred to those items which are much easier or much harder.

2. Item Discrimination Statistics (D-value)

Item discrimination or the discriminating power of a test item refers to the degrees to which success or failure on an item indicates the possession of the ability being measured. In other words, item discrimination shows whether the test item differentiate between people of varying degrees of knowledge and ability. According to Maheshwari and Maheshwari (2011), it is defined as the percentage of the "high group passing the item minus the percentage of "low groups passing the same item, while Sudha and Janardan (2014) regard it as a measure of the ability of the item to discriminate between high and low achievers. The higher the value, the more discriminating is the item. The index of discriminating power (d-value) indicates the degrees to which an item discriminates between high and lower achievers on a single administration of the test while the index of sensitivity to instructional effects indicates the degrees to which an item reflects intended effects of instruction determined based on pre-test and post-test results. The value ranges between -1.00 to 1.00 hence the higher the value, the more discriminating is the item. A highly discriminating item indicates that the students who had high test scores got the item correct whereas students who had low test scores got the item incorrect.

According to Bichi (2013), two indices can be used to determine the discriminating power of an item namely, the item discrimination index (D) and the discrimination coefficients. While the former method made used, of extreme groups whereby 27% of the students at the top and 27% at the bottom are separated for the analysis. Generally,

researchers stated that 27% is used because it has shown that this value will maximize differences in normal distribution, while providing enough cases for analysis (Wiersma, 1990; Joshua, 2005). However, it could be seen that with this method, only 54% of the students are involved in the analysis.

Applying the later method of discrimination coefficients, two techniques or indicators of items discrimination effectiveness are Point-biserial correlation and Biserial correlation coefficient (Bichi, 2013). The selection of any correlation technique depends upon what kind of questions a researcher intends to answer. Comparatively, a major shortcoming of the discrimination index D is that only 54% (27% upper + 27% lower) are used to compute the item discrimination, leaving the remaining 46% of the examinees. However, one advantage of using discrimination coefficient over the discrimination index D is that every person/candidate who participated in the test is utilized in computing the discrimination coefficients. Another advantage with using the Point-biserial correlation coefficient is that it can be computed using SPSS easily. Thus, it is the correlation between a single item and the total score without this item (item-total statistics).

A high point-biserial coefficient means that students with higher total scores are students choosing the correct responses, and students selecting incorrect responses to an item are correlated with lower total scores. Based on the value of r-pbi, item can discriminate between high-ability and low-ability examinees. Very low or negative point-biserial coefficients can help to identify defective or weak items (Erguven, 2014). Based on widely used criteria and guidelines in Classical Test Theory item analysis, Ebel's (1979) in Quaigrain et al., (2017) and Bichi (2013) concurred and presented the following as guidelines for this research.

Table 1: Interpretation of Discrimination Index

Item Discrimination	Quality of an Item
If D > 0.40	Item is functioning ,quite satisfactory
If D is 0.30 < 0.39	Good item, little or no revision is required
If D is 0.20 < 0.29	Item is marginal and needs revision
If D < 0.19	Poor item, should be eliminated or completely revised

The discrimination index indeed is the degree to which an item and the test as a whole are measuring a contrary ability for values of the coefficient will tend to be lower for tests measuring a wide range of content area than for more homogenous tests

(Quaigrain et al., 2017). It should be worthily noted that the higher the discrimination index, the better the item. Quaigrain et al., (2017) further cautioned that removing these low discriminating items could easily impair test validity. In this regard, since the typical classroom tests measures a variety of instructional objectives, we might expect to find that low positive indices or discrimination are the rule rather than the exception (Gronlund, 1998, p.253). Item discrimination indices must always be interpreted in the context of the type of test which is being analyzed. Items with negative indices should be critically examined to determine why a negative value was obtained. Mehrens and Lehman (1991) in Quaigrain et al., (2017) posits that there are a variety of reasons why items may have low discriminating power:

(a) The more difficult or easy the item, the lower its discriminating power –but we often need such items to have adequate and representative sampling of the course and objectives, and

(b) The purpose of item in relation to the total test will influence the magnitude of its discriminating power (p.888).

3. Distractor Analysis

Distractor evaluation is another useful step in reviewing the effectiveness of a test item. Distractor Effectiveness/functionality, according to Sudha and Janardan (2014) is the effectiveness of the item to distract those students who have not mastered the concepts. The quality of the distractor influence student performance on a test. Unfortunately, neither item difficulty nor item discrimination account for incorrect option (distractors), therefore, distractor analysis will assist individuals with addressing performance issues associated with incorrect options. On a well-designed multiple choice item, high-scoring students should select the correct option even from highly plausible distractors (Raumond, 2007). Indeed, all of the incorrect options or distractors should be selected by a greater proportion of the lower scorers than of the top group. Supporting this assertion, Sudha et al., (2014) posit that distractors should appeal to the low scorers who have not mastered the material whereas high scorers should infrequently select the distractor. Reviewing the options can reveal potential errors of judgment and inadequate performance of distractors. These poor distractors can be revised, replaced or removed.

One way to study responses to distractors is with a frequency table. This table tells you the number and / or percent of students that selected a given distractor. Researchers had classified distractors into two namely Functional/Effective Distractor (FD) and Non-Functional Distractor (NFD) (Sudha, et al., 2014; Nandeo and Sahoo, 2016;

Quaigrain et al., 2017). A Non-functional Distractor is defined as an option, other than the key selected by less than 5% or a positive discrimination power, while a Functional/Effective distractor is the option selected by 5% or more students (Hinjorjo & Jeleel, 2012; Haladyna, 2002, Rao, Prasand, Sajitha, Permi & Shetty, 2017). On the basis of NFDs in an item, Distractive Effectiveness (DE) ranges from 0% to 100%. If an item contains three or two or one or nil NFD, the DE would be 0, 33.3%, 66.6% and 100% respectively. Expressed in another way, ideally low scoring students should choose the distractors more than often, whereas high scorers should discard them by choosing the right option. Distractor Effectiveness (DE) is ranged from 0-100% and was determined on the basis of number of NFD (NF-D) in an item. 4NF-D, DE = 0.6, 3NF-D, DE =25%, 2NF-D, DE=50%, 1NF-D, DE=75% and Nil NF-D, DE=100% (Hingorjo & Jaleel, 2012).

4. Reliability

Academic literature had revealed that there are varieties of methods of estimating the reliability of any construct. This could be based on either once or twice administrations as preferred by a researcher and the purpose to be achieved. However, the statistic that measures the test reliability of inter-item consistency as it is related to this research is under the internal consistency reliability. This is conceptualized as the degree to which the items making-up the concept of interest are measuring the same underlying concept. There are different techniques of determining internal consistency that can be used (Joshua 2005, Krishanani, 2013). For this achievement test in research, been a multiple choice items that are scored dichotomously and administered once, the most suitable method for estimating internal consistency reliability is the famous Cronbach's alpha and Kuder-Richardson formula 20 (K-R20). The Cronbach alpha method was used in this research with the help of SPSS Version 23.

Research Questions

The following research questions were formulated to guide and direct the study.

1. What are the general descriptive statistics of the educational measurement and evaluation test?
2. What are the item statistics (difficulty and discrimination indices) of the educational measurement and evaluation test?
3. How many items survived or are ideal after item analysis on the basis of their difficulty and discrimination values?
4. How many distracters are functional after item analysis of each item?

5. What is the correlation between item difficulty and item discrimination indices of educational measurement and evaluation test?

Methodology

A total of 310 students participated in the exam. The achievement test consisting of 60 MCQs based on the course EDU 521 Educational Measurement and Evaluation taught in 2018/2019 academic session. All respondents were 500 level B. (Technology Education students pursuing first degrees in Industrial and Vocational Programme in the Department of Education (Technical), Kaduna Polytechnic, Kaduna. The programme is affiliated to Federal University of technology, Minna, Niger State, Nigeria. The items were carefully developed using the test blue prints considering the various topics and weight level assigned to each topic based on the specific purposes. The time given for the test was 60 minutes. The items had four options, one of them being the correct answer (key) and the other three being distracters. The items were scored dichotomously, implying that a correct answer was awarded a mark of 1 and incorrect 0, with the three being distracters. Traditionally, it is recommended to use four or five options per item in order to reduce the effect of guessing. According to Quaigrain et al., (2017), most classroom achievement tests and international standardized test (e.g. TOEFL) usually follow the rule of four options per item. Thus the maximum possible scores for the test were 60 and minimum of 0.

The students responses from the MCQ were analyzed using computer software called SPSS version 23. The MCQ were analyzed for (1) level of difficulty which is measure of difficulty index (P-value, power of discrimination as measured by the discrimination index (DI or D-value) as well as distracters analysis for all non-correct options to determine their plausibility. The data analysis similarly included determining the test reliability by utilizing (K-R 20) and Cronbach alpha and Point-biserial correlations. The Cronbach alpha technique was used to assess internal consistency reliability of the test scores. Most high-stakes tests have internal reliability value of .90 or higher but teacher-made tests/assessment generally has values of .80 or lower. Researchers like Rudner and Scheter (2002), posit that a teacher-made assessment needs to demonstrate reliability coefficient of approximately .50 or .60.

Results and Discussion

Research Question 1: What are the general descriptive statistics of the educational measurement and evaluation test?

The descriptive statistics of the measurement and evaluation test reveals that the test consisted of 60 items. The distribution of 310 final year students who took the test are Electricity/Electronic 117(38%), Woodwork 21(7%), Automobile 25(8%), Building 29(9%), Drafting 4(1%), Metalwork 29(9%), Educational Technology 10(3%), Agric Science 34(11%) and Computer science 42(14%). The scores of the students ranged from 11 to 52. The mean of the test score was 31.67 and standard deviation of 7.86. The median was 31.00 and the inter-quartile range value was 9. The skewness and kurtosis values were .145 and -.036 respectively. The internal consistency reliability computed through Cronbach alpha technique was .822. This show that the test is reliable since the coefficient is greater than the recommended acceptable value of .70 (Field, 2005, Nunnally, 1978, Gliem and Gliem, 2013). The item mean difficulty (p-value) is 0.518 while the mean item discrimination is 0.244.

Research Question 2: What are the item statistics (difficulty and discrimination indices) of the educational measurement and evaluation test?

Table 2: Shows the distribution of both the Item difficulty and Discrimination indices listed from items 1-60

Item No	(P-value)	(D-value)	Item No	(P-value)	(D-value)
1	.67	.31	31	.57	.22
2	.48	**.18**	32	.34	**.07**
3	.72	.28	33	.39	.41
4	.78	.35	34	.91	.21
5	**.27**	.30	35	.35	.35
6	.38	.39	36	.34	.47
7	**.28**	**.18**	37	.53	.27
8	.86	.24	38	.31	**-.03**
9	.80	**.15**	39	.49	.23
10	.69	.29	40	.61	.30
11	.69	.31	41	.72	.26
12	.30	.21	42	.66	.32
13	.54	.37	43	.41	.30
14	.74	.31	44	**.28**	.36
15	**.29**	**-.01**	45	.84	**.15**
16	.31	**.19**	46	.37	.21
17	**.07**	**-.01**	47	.39	.22
18	.63	.42	48	.79	**.11**
19	**.24**	**.03**	49	.61	**-.07**
20	.44	.33	50	**.28**	**-.04**
21	.73	.32	51	**.13**	.24
22	**.22**	**-.15**	52	**.13**	.22
23	.82	.22	53	.36	.43
24	.39	.32	54	.34	.40
25	.36	**.00**	55	.88	.46
26	.34	.20	56	.88	.48
27	**.27**	**-.10**	57	.84	.35
28	.64	.42	58	.84	.37
29	.50	.33	59	.83	.39
30	.37	.23	60	.80	.41

Items of special interest are in **bold

Table 2 depicts the Classical Test Theory Model item parameters of the Measurement and Evaluation test. It should be noted that this data reveals two of the psychometric parameters (i.e. difficulty and discrimination indices) listed from No. 1-60.

Research Question 3: How many items survived or are ideal after item analysis on the basis of their difficulty and discrimination values?

Table 3: Distributions based on Difficulty Index (p-value)

Items Difficulty Index (p-value)	Total Items
Easy items P > .70	17 (28%)
Moderate items 0.31 − 0.70	32 (54%)
Difficult items <0.30	11 (18%)

Based on universally set standards for interpreting difficulty indices, the data in Table 3 reveals that 17(28%) of the items were easy, 32(54% were of moderate difficulty while 11(18%) items were considered difficult. Based on this standard, these eleven items can be considered poor or defective. Therefore, majority of the items 49 (82%) were of acceptable level of difficulty with a p-values within the range of 31 − 90%. Out of the 11 items that are difficult, 3 items (i.e. 17, 51, and 53) seems very difficult and this need to be removed whole other can be re-modify or revised.

Table 4: Distribution based on Discrimination Index (D-value)

Discrimination Coefficient (D-value)	Total items
Very Good D > 0.40	8(13%)
Reasonably Good 0.30 − 0.39	18(31%)
Marginal 0.20 − 0.29	17(29%)
Poor < 0.19	16(27%)

To the other psychometric parameters of discrimination index and based on the criteria as tabulated in Table 4, the results indicates that 8(13%) of the items are very good and are thus functioning very well, 18(31%) of the items are reasonably good, hence satisfactory, 17(29%) items are marginal and that they require review, modifications or revision while 16(27%) items failed to distinguish between students who are knowledgeable and those who are not in terms of different abilities in Measurement and Evaluation. Based on this selection criteria, it can be concluded that 26(44%) of the items had good to excellent discrimination indices (D > 0.30). In addition, 16(27%) of the items are poor/defective and failed to meet the condition, thus should be eliminated completely or revised as they have very low discrimination power.

A combination of the two indices (item difficulty and discrimination index), shows that 43 of the items can be labeled "ideal" having p-values ranging from 30 to 80% as well as DI > 0.30. However, if only items with excellent p-values (40 − 64%) and excellent DI (> 0.40) are considered there are 20 items which could be called as "excellent".

Research Questions 4: What is the correlation between item difficulty and item discrimination indices of educational measurement and evaluation test?

Table 5: Results of correlation between Item difficulty and discrimination values

Item Statistics	N	M	SD	R	Df	P
P-value	60	0.517	0.231	.397	58	.002*
D-value	60	0.244	0.152			

*Correlation is significant at .01 (2-tailed)

Empirical data presented in Table 5 reveals a significant moderate positive relationships between difficulty index and discrimination index $r(58) = .397$, $p = .002$, $d = 0.72$. This implies that as the difficulty index increase, there is a corresponding increase in discrimination power of the test. In conclusion the research results reveals that the test items on the average possessed 0.517 levels of difficulty and 0.244 discrimination values. According to Quaigrain et al., (2017) citing Kline (2005) expressed that item with p-values closer to 0.50 are considered more useful in differentiating between individuals (learners).

Research Question 5: How many distracters are functional after item analysis of each item?

Table 6: Frequency distribution of Functioning Distractors

Variable	Frequency	Percentage
Number of Items	60	
Number of Distractors	180	
Distractors with frequency < 5%	43	**23.9**
Distractors with frequency > 5%	137	**76.1**
Functioning Distractor per item		
0	30	**50**
1	16	**27**
2	10	**16**
3	4	7
	60	**100**

In this item analysis, 180 distractors were analyzed, 43(23.9%) distractors had a choice frequency of less than 5% while on the other hand 137 (76.1%) distractors had a frequency choice of greater than 5%. Test items that had positive discrimination indices were 53 while 7 items had negative discrimination indices. Basically, the

essence of distractor analysis was to identify Non-functioning and Functioning alternatives/options. Earlier on a non-functioning distractors was defined as one that was selected by less than 5% of the examinees. It should be noted that the functionality or functional effectiveness of the distractors tends to serve as an independent indicator of item functioning in a test. As earlier stated, distractors which are selected by one or more candidates are known as functioning distractors while those not chosen by any candidate are called non-functioning distractors. To item developers like teachers, constructing options with equal plausibility is indeed a difficult task, especially in an end of semester examination. According to Nwadingwe and Naibiu (2013), plausibility means that the distractors must be undeniably wrong, yet be compelling, rational and logical enough to appear as correct, to those who do not possess the particular knowledge being tested.

In the final analysis, it must be emphasized that the functional effectiveness of distractors, the flaws in item writing as well as the optimum number of options and grammatical easiness are all interrelated ant thus affect the quality of an item, item performance and the test results at last. No wonder Tarrant, Ware and Mohammed (2008) succinctly concluded that items with two functioning distractors were more difficult than items with three functioning distractors.

Discussion of Findings

Educational institutions are set-up to achieve specific objectives. To achieve instructional validity, classroom instruction should synchronize with the test items meant to evaluate lesson goals. This synergy requires constructing good test items and later on analyzing the psychometric properties of the items. In this regard, Mazet and Parhow (2012) buttressed the significance of classroom teachers comprehending and utilizing statistical analyses of test materials in order to improve their pedagogical strategies, procedures and techniques as well as test construction. The psychometric properties of difficulty and discrimination indices are among the tools teachers can utilize to verify and ascertain whether the MCQs in their subject areas are well constructed or not. Another tool that can be used for further analysis is the Distractor Effectiveness (DE) which helps in analyzing the functionality of distractors.

The present research reveals that the mean p-value obtained was 52%, which by all standard is within the range of excellent level of difficulty (p= 40 to 60%). The mean D-value computed ion this study was 0.24, which is equally considered reasonably good, while the distractors were analyzed to determine their relative usefulness in each

item. If candidates are found to consistently fail to select certain MC options, it may be that those options are perhaps implausible, and consequently of little functionality in multiple choice items. To classroom teachers therefore constructing of plausible distractors and reducing the NFDs is a significant aspect for developing quality MCQs. Supporting this assertion, Tarrant et al., (2009) posit that DE is one such tool that tells whether the items were well constructed or failed to perform their purposes. Thus any distractor that has been selected by less than 5% of the examinees is considered to be non-functioning distractor (NFD).

In addition, Gronlund and Linn (1990) observed that low-scoring students who have not grasped or mastered the subject content should choose the distracto5s more often, whereas high-scorers should reject them more often while choosing the correct option or key. Hence, classroom teachers and subject lecturers can use this powerful technique to help them modify, revise or remove specific items from the test. When this is meticulously done, the modified items can be utilized in subsequent or future examinations. Commenting on the consequences, Tarrant et al., (2009) further asserted that flawed MCQ items affect the performance of high-achieving students more than borderline students. Constructing balanced or good MCQs therefore addresses the concern of the candidates of obtaining an acceptable average grade performance in the test. Similarly, researchers like Carrol (1993) and Rodriguez (2005) concurred that numbers of NFDs also affect the discrimination power of an item. It is seen that reducing the number of distractors from four to three decreases the difficulty index while increasing the discrimination index and the reliability (Vegeda, Shukla, Khilnani, Charan & Dejai, 2016; Nwadinigwe & Naibi, 2013). Comparatively, what should be preferred more, difficulty index or discrimination index? It can be concluded that discrimination index, that aspects that deals with knowledge mastery should be preferred. Studies by Vegada et al., (2016), Nwadingue, et al., (2013 and Quaigram et al., (2017) buttressed favoring better discrimination by three distractors as compared to four. This is true because constructing items with four distractors is a difficult task and writing a good fourth distractors is usually more difficult, especially in the hand of inexperienced; lecturers. In the words of Quaigram, et al., (2017), it is like just trying to fill the gap and the fourth distractor has a high propensity to become the weakest distractor.

Conclusion and Recommendations
In conclusion, designating MCQ test items for an end of semester examination by a subject lecturer requires time and carefully selecting content that will produced the

desired test results. Thus, it is a task that should commence early. Item analyses tend to provides reliable information for further item modification and future test development and utilization. Test development required important test Quality Control. It is therefore significant for lecturers to conduct item analysis hence ensuring quality control. In the event of inadequacy, they should seek assistance. Academic performance in an examination should reflect only the proficiency or mastery in the target construct and no other irrelevant areas (Bonnel and Boureau, 1985). Specific test items should be modified or revised if students consistently fail to select certain MCQ alternatives. This means that the test tends to be one-dimensional. Items with negative discrimination items indices must be detected, modified or replaced. Subject lecturers must re-write/reword all items with zero discrimination indices. Similarly, teachers must replace or re-write all items with low positive discrimination indices. Surely, when all these recommendations are implemented, the reliability of the test will be increased.

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CHAPTER **8**

Qualitative Education as an Instrument for Nation Building in Africa

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Introduction

An understanding of quality in education pre-supposes certain basic assumptions in education. There is no education system which is neutral, and absolutely free from the political options, and the socio-economic framework in which it operates. The reasons relate to the fact that education is not an isolated entity within society; it influences and it is influenced by the cultural environment in which it is set. It can be used as an instrument for moulding the character of a people as exemplified by post-1917 Communist Revolution also by pre-world War II Germany. Education has been conceived as the primacy instrument within a state for fulfilling the hopes and aspirations of a people and for satisfying individual needs and aspirations. An indication of this is the social demand for education at all levels of the educational system in this country. By its very nature, education must either conserve what is worth preserving in a cultural environment or promote change depending on how the system is organized, who formulates and adopts policies and the purpose to which education is employed to serve in a given cultural environment either as an instrument of change or conservation. Thus, the quality of education in society as measured by some notion of what is considered most desirable for the well-being of that particular society determines the quality of life in that society. The goals of education in a particular state which enshrine the vision of the future which the policy makers wish to create by the existing educational system determine the quality of education within that state.

Since educational goals which determine quality differ from one cultural environment to another and may aim at either perpetuating existing reality of change it, the concept of quality in education is relative. It will have varied interpretations in different cultural settings. The type of citizen reproduced in the nation the next decade or two and the nature of society which will be evolved at that period will be the product of the prevailing educational system which has been fashioned by the educational goals we set today.

Education and Nation Building
Man is for the most part result of his education. Nations are built by men. In order to build nation on firm moral foundations, the people who build the nations must themselves be man of sterling qualities and firm moral fibre. This is the task of education. During the 1950s, the focus of both thought and action in Africa was regarded as a pre-condition for all genuine development and nation building founded on the sovereignty and free determination of peoples. A framework of independence was in each case, followed by a considerable effort to draw up development plans aimed at ensuring economic growth and social well-being. Development was then measured in crutely with tarian terms as growth in a nation's Gross National Product per capita. While economic growth has continued to be regarded as crucial to nation-building, there is a universal awareness today of the human aspects of development and nation-building. Man is considered the centre and agent of his own development; in consequence, his all-round education is a crucial factor of any process aimed at nation-building.

The nation that development should be centred on man, on his capacities and creative abilities, focused attention on its repercussions on ways of life, attitudes and systems of values which must be inculcated and transmitted to the emergent generation. As a corollary of this notion of balanced development was a concern for equity and social justice; and the ways in which the various component elements of development interact; namely, economic progress, income growth, distribution of wealth, promotion of well-being and development of human resources, in particular through education. Hence, the desire of sovereign, independent African nations to develop their human resources for nation-building.

Initially, development of human resources was conceived in terms of qualitative increase. The Addis Ababa Conference of Ministers of Education held in 1961 focused attention on the quantitative targets of enrolments to be achieved in 1965/70 and 1990

and 1980. The introduction of the Universal and Free Primary Education (U.P.E.) in Nigeria in 1976 stemmed from this conference. A similar conference held in Nairobi 2008 revealed that for many independent African countries free and universal primary education in 2000, did not appear to be a likely prospect, and that high rates of wastage reflected certain inadequacies of education of educational systems. It was learnt that qualitative improvement in educational system should be a pre-requisite of quantitative expansion. This view was upheld at the Lagos Conference of 2006 which laid stress on the need for a combined effort towards quantitative increase and qualitative improvement in education. In the Cross River State, qualitative improvement is the primary goal of education. In the development of human resources for nation-building in post-independence Africa, quantitative increase preceded qualitative improvement in education at the pre-university level.

Quantity and Quality in Education

Subsequent experience has shown that it is more difficult to bring about qualitative change than quantitative increase in education. Many factors account for this difficulty. In educational systems, quantity and quality impinge on each other at several points, but they are basically discrete and separate. The numerically assessable aspects of qualitative education include the number of adequately trained teachers per class or students, class size, textbooks, and equipment. The reasons for the differentiation between quantity and quality stem from the fact that quantitative increase in statistical enrolment of student population, the number of school buildings, teachers, or textbooks can be affected by decree, or legislative instrument. It is easier to decree on universal primary education than on a universal quality in education. Qualitative change is more basic and fundamental; it affects the very essence of the educational system. It requires more than a decree or a legislative instrument to effect a qualitative change in education. Quality in education requires a change in attitudes and psychological orientation of educational administrators and teachers who are at the operational level of the education system, as well as students who are the direct beneficiaries of qualitative change; and the clients of the educational industry; namely, parents and employers, in both government and private sectors of the economy. This process takes time. While enrolment has increased threefold, and four-fold in some states within the nation since 1960, qualitative improvement in education cannot claim comparable increase. Indeed, some educationists hold the view that educational quality has actually declined at some levels and within certain states over the same period.

It is well to be cautious about statements about decline in quality of education, since the criteria employed in determining the quality of education in one cultural environment may not be applicable in another environment. The indicators of qualitative education vary from country to country. Education decision-makers and planners do not all agree on what constitutes quality in education, and there is no universally accepted method for measuring it. The onus lies on the educationist who refers to quality in education to identify the limits within which the word is used, as a starting point of meaningful discussion.

Possible Lines of Action
What is Qualitative Education?
Any meaningful discussion of qualitative education must take account of the central place of child growth and development in the educational system. For the child will become the man, the centre and agent of nation-building. Quality in education does not only consist of good teaching, but also good learning. Quality of learning is influenced by the conditions obtaining in the school, health, nutrition, parents' attitude, living levels of families, the cultural and religious views prevailing in a community and, above all, the goals of education.

The goals of education should, among other things, be the result of philosophical reflections and intellectual analysis of man, the systems of relationships which link man to nature, his cultural environment and the society in which he lives, acts and creates. In contrast, objectives fall within the domain of educational policy; they are specific concrete proposals aimed at the solution of identified problems which beset societies. These goals should embody the hopes and aspirations of the nation.

The five main national objectives of Nigerian education as stated in the White Paper on the Philosophy of Nigerian Education are the building of:
1. A free and democratic society
2. A just and egalitarian society
3. A united, strong and self-reliant nation
4. A great and dynamic economy and
5. A land of bright and full opportunities for all citizens.

The implications of this philosophy for Nigerian educational objectives include
1. The inculcation of national consciousness and national unity
2. The inculcation of the right type of values and attitudes for the survival of the individual and the Nigerian society

3. The training of the mind in the understanding of the world around and

4. The acquisition of appropriate skills, abilities and competencies; both mental and physical, as equipment for the individual to live in and contribute to the development of his society. Undoubtedly, those objectives are noble and sound. It is not enough for statements to be embodied in a document entitled *"The philosophy of Nigerian Education"*. This philosophy should be translated into concrete objectives, digested and internalized by teachers, educational administrators and all personas concerned with child growth and development so that these goals will find nature expression in the design of curriculum, selection of textbooks and the methodology of teaching. Unless educational goals are given concrete expression in teaching-learning situations, they will remain inert statements of intentions which will have only a marginal impact on actual outcomes of the education system.

Additionally qualitative education is a relative expression defining the extent to which learners are able to acquire knowledge and skills and use them.

Problems Militating Against Qualitative Education
1. The number of children in schools
2. The cost of learning facilities
3. The problem of teachers
4. Half-hearted recognition of guidance services
5. Parents role in quality education
6. The problem of inadequate curriculum
7. Administrative
8. Cultural/Religious problems
9   Teacher mobility in Africa
10. Population explosion

Additionally, qualitative education is a relative expression defining the extent to which learners are able to accomplish their development tasks, education thus deemed qualitative of learners exhibit the expected competence to solve relevant problems and carryout task that are designed for their educational and age levels. Qualitative education also evident if the teaching-learning resources are available in the right quantity at the right time for the right calibre of children and used correctly by teachers. Qualitative educator is evident when teachers are qualified to teach and are

competent and efficient in the delivery system generally. Education is also deemed qualitative of the societal problem are effectively addressed and teachable by the school.

Finally, qualitative education manifests itself in the efficient performance of school – children in continuous and final assessments with little or no recourse on the part of both students and teachers to some form of cheating behaviour or examination malpractice to make up for deficiencies in learning and teaching. Education is a fulcrum on which all other developments pivot in Africa. Investment in education is investment in manpower development, political sanity and survival, health education and healthy living, economic progress, and cultural development and transmission. Our technological advancement as a certificate with which to match confidently and functionally to the year 2025 in Africa is rooted in education. In fact, there is no type of government (military or civilian in Africa) that can halt or even slow down the development of education without facing a national crisis.

Professional educators need to be aware of the hurdles militating against qualitative education so that they can ferret out possible solutions to these problems. The galloping cost of education at all levels in recent years in Africa has further added impetus to the crusade against poor quality education. If so much money is invested in education, the returns must justify the investment. Moreso, universalizing education was a sound philosophy, the execution was marred because the planning for the number of teachers, equipment, classroom space and other learning resources which the scheme needed to succeed was far from satisfactory. Within a short time, the whole nation was dotted with primary schools, some of which were nothing more than sign boards carrying the name of the ambitious proprietor, community or agency. Most of short time for wants of maintenances, and their so-called sites were reclaimed by the tropical forests or grass growing with amazing rapidity under a generous rainfall regime. The only good thing that survived this grandiose attempt to expand education was the spirit and philosophy to democratise education. Thus, the excellent intention to give the African child an education of the head, the hand and the heart which would sense as "Insurance policy" even if he or she had to drop out of formal schooling for one reason or the other was thwarted.

Problems Militating against Qualitative Education
The following problems are capable of exacerbating poor quality education. They include:

1. **The number of children in school**

The number of children enrolment figures has in most cases outstripped the existing learning space in today's classrooms. The size of the class has become increasingly unmanageable. With the student-teacher ratio of about 50:1, it becomes almost impossible for the teacher to give individual attention to the children needing it. Continuous assessment stands dreaded by teachers when they consider the staggering number of scripts they will mark. The teacher's eye-contact with the children in class becomes so dissipated that a number of poorly motivated children can form small committees at the back of the class to engage in non-school discussions while the teacher is busy teaching. Without effective management of the classroom, teaching becomes ineffective as well.

2. **The cost of learning facilities**

Quite apart but related to the soaring number of children in school today is the cost of building and maintaining classrooms, providing learning facilities such as laboratories, chalk, books and other consumable items. The cost of these things is likely to be as staggering as the enrolment figures themselves. In the face of this huge cost, many schools remain starved of the learning resources that make education qualitative. The teachers' methods of effective teaching remain unused because of a lack of teaching materials. The replacement of obsolete materials becomes very difficult especially in the face of the falling value of Naira. With a high capital outlay necessary to accommodate children into the portals of our education establishment, one can see some frustration forthcoming.

3. **The problem of teachers**

A casual observation may give some false impression that the Nigerian school system is inundated with teachers to the extent that the problem is how to reduce the teachers' number and now how to get enough of them. But when one tries to separate quality teachers from the chaff or low-grade ore, then the picture becomes clearer. Entry into the teaching profession has for centuries remained a relatively easy affair since the "borders" purported to protect the teaching profession have remained porous. In not too distant a past, any school leaver who was waiting for opportunities to either further his education or find a good job would decide to teach as stepping stone. Unfortunately, such unauthorized entries were tolerated and implicitly encouraged. Now, the situation looks a bit better because there is a reasonable number of qualified teachers and also, the havoc done to the profession by such "intruders" is well known.

But compared with the demand for them, qualified teachers are still in short supply. Even were they are sufficient in terms of number and qualification, the conditions of service do not provide enough motivation for them to invest themselves in teaching. Thus, in the absence of job-satisfaction, many teachers fly at half-mask, causing an artificial shortage of teachers since each is operating at less than full capacity. Constant teacher unrest contributes to poor quality learning. Since so many teachers are needed to cope with the soaring enrolment figures, particularly when shifts are being advocated (separate teachers will be needed for each shift), the Naira cost of training teachers is quite high. To manage half-baked teachers in order to save cost is to lower the quality of education. Adequate funds should be expended to produce well trained teachers who, all being well, are most likely to raise and maintain the standard of education. Apart from paying teachers a reasonably good salary for their significant contribution to manpower development and all, they should also enjoy a good housing policy and other forms of social welfare services. The teachers spiritual reward is in "Heaven", but since Heaven" does not talk of materialism, let them enjoy a bit of material reward on earth like everybody else. Even if this will add up to a double dose, they still deserve it.

4. Half-hearted Recognition of Guidance Services

Guidance is defined as a cluster of formalized educational services aimed at assisting youths to gain self-understanding so that they can direct themselves in making educational, vocational and personal-social decisions and also engage effectively in problem resolution generally. Without appropriate guidance, youths cannot choose relevant educational programmes to their interests and abilities. Denga (2002) has indicated that one of the major reasons for a high drop-out rate among students is failure which could be forestalled if students can be properly guided to choose academic programmes and subjects that are tenable to them.

Admittedly, the governments (Federal and State) have fully recognized guidance and counselling as an integral educational service that is critical to learning. But the actual implementation of this service in the school system leaves much to be desired. The establishment of full counselling services in such a way that full-time counsellors can concentrate on helping children to resolve issues which inhibit their academic performance is rare to find in our current educational system. Even when they exist, counsellors are heavily saddled with teaching chores to the point that they hardly have time for students.

Guidance is not a teaching subject in the school system. But it is critical to student discipline, personal – social adjustment, educational development and vocational preparation. Without this ancillary educational service, it will be difficult to select children for the right educational programmes, guide them later to enter into appropriate occupations and facilitate the removal of those psycho-social roadblocks that tend to inhibit the development of maximum potential. Guidance services designed to combat the huge wastage of student population which hides behind the bulging enrolment figures. If we promise education for all by the year2000, we must utilize guidance services to cut down the high rate of student attrition, so that more children can march on to the year 2000.

If children represent the seedlings, school counsellors represent the most adroit and skilful gardeners with the most satisfactory husbandry which is needed to promote a healthy and total growth of these young plants. The counsellor's preventive and remedial roles in areas of learning difficulties, vocational preparation, indiscipline, psychological and social problems will certainly contribute greatly towards qualitative education. A full chapter will be devoted to Guidance and Special Education as critical services to utilize in our voyage to the year 2000.

5. **Parents Role in Quality Education**

Today's parents are most of the time pursuing projects and activities that provide immediate economic or social returns. By the time they come home, they are in most cases thoroughly battered by the physical and mental exhaustion. Many of them have at least heard and read that parents should assist the school in teaching their children at home. But this becomes a sheer lip-service.

In fair cases, the mother tries to find out what the children are doing at school while the itinerant father continues to gallivant, ostensibly to win more bread if the working wife is winning some butter. Working parents may decide to employ a part-time teacher to teach the children at home, thus playing a surrogate parent. But this "role is fraught with insincerity on the part of some part-time teachers and sometimes story-telling dominates the teaching sessions. Parents should find time to "probe" the learning activities of their children and supplement when they come back from daily engagements.

Another role which parents need to play for quality education is to buy the necessary learning materials which will facilitate learning. Books are becoming impossibly

expensive. But a child who depends on friends regarding the sharing of resources cannot maximize his potential. It is socially and psychologically frustrating for a child to borrow most of them time. He earns the name a "beggar" among his classmates and decides to withdraw from borrowing and sharing. Many schools today are inadequate in terms of learning materials. Parents should provide for children, try to teach them extra at home and above all, provide a family climate that is psychologically conductive for children to grow up as well-adjusted, responsible and motivated children, ready to learn.

6. **The problem of inadequate curriculum**

A full chapter is devoted to curriculum and instruction qualitative education. It is however, necessary to state in heuristic terms how a well planned and executed curriculum can facilitate qualitative learning. Curriculum is one of the terms or concepts in the realm of education that resist a single definition. There are almost as many definitions of the term as there are authorities on the subject. The present author has no time or space for a plethora of definitions. He has therefore, distilled a score of definitions and presents the most digestible and pedestrian definition here. Curriculum is thus defined as a programme of activities comprising what to learn, how to learn it, why it should be learnt as well as co-curricular activities including guidance services, which has been planned under the auspices of the school, but may include unplanned experiences that significantly bear on learning.

The breakdown of this definition indicates that "what to learn" means the content or subject matter. "How to learn" means the pedagogical strategies in the total teaching-learning situation. "Why to learn" directs us to the awareness that there is always too much to learn at any particular time. There must be purposes and reasons for selecting specific content and learning experiences that are appropriate to the needs of the learner and the society at a given time. Co-curricular activities include sports, games, clubs and societies. These are activities organized under the guidance of the school. They promote the learning of social skills in corporate life, promote mental and physical health, supplement the knowledge acquired from related subject matter and help the school to achieve its mission of service to community. Guidance services are educational services that play an ancillary role in promoting learning. Unplanned experiences are the experiences that may not necessarily be planned under the auspices of the school, but may prove effective as vehicles of learning which the school can wisely harness in the planned curriculum. A good example of such an unplanned but useful experience is vocational information obtained from guest speakers on a

"Counselling Day" which the school can incorporate in the regular vocational development programme of the school. The unplanned experiences are sometimes called the "Hidden Curriculum".

There are several ways in which curriculum can promote qualitative education or demote it. The following ways are positive and should be encouraged.

1. The definition of goals and specific objectives should first be made. The absence of clearly defined goals and behavioural objectives can be likened to a person who had no destination and so kept going on and on without stopping. There is too much material to learn. Goals and specific objectives must direct learning.

2. The selection of the content to be learnt must be based on the criteria of validity, utility, reliability, suitability in terms of children's age, interests and needs. Anything short of these reduces the effectiveness of the curriculum

3. The selection of learning experiences should be based on the needs of the children and the society and should reflect the current subject-matter.

4. The organization of content and experience should broadly follow the vertical and horizontal approaches. The vertical approach refers to the sequencing of materials from the simple to the complex and the known to the unknown. It also refers to the spiral approach in which the knowledge gained from the lower years of education is transferred meaningful and additively to the subsequent higher years. The horizontal approach refers to the correlation of subjects which enhances understanding. The relationship between physics and Mathematics, History and English, Biology and some aspects of Geography should be meaningfully correlated so that the integration of subjects and ideas can be seen for better understanding. Other effective methods such as the Project Method, the Discussion Method, the Lecture Method, the Dramatic Method, the Assignment Method (the Dalton Plan) and so on should be appropriately applied to foster qualitative learning.

5. Evaluation should be carried out periodically to ensure effective learning. Evaluation should follow the continuous assessment guidelines and should cover, not only the cognitive domain but also the effective and psychomotor domains. Children should not be tested to death.

It must be pointed out that the five stages listed here operate in a cynical fashion with thin lines of demarcation between them. The psychological principles undergirding learning should be closely observed so that learning experiences are relevant and

appropriate to the learner. An eclectic blend of moderate and challenging curricular experiences should be utilized to keep children of varying abilities gainfully busy.

7. Administrative Inertia

Getting the job done in school is the role of school administration. Poor and delinquent instruction supervision cannot produce qualitative education. But frequent, well planned and regulated supervision promotes learning and teaching.

Effective leadership has much to do with the quality of input and output. A leader who is visible and encourages spontaneity rather than imposed commitment to work does not get the teachers or students to do the work.

A sound administrator makes sure that:
1. The instructional plan is adequate for all categories of students in the school.
2. An adequate budgetary provision is made for instructional services
3. The morale of teachers is high most of the time
4. The school plant is well maintained
5. Student placement is done with benefit to both the individual and the society
6. Admission processes are devoid of fraud and corruption. Rational and objective criteria should be used to admit children if a need for selection exists.

8. Cultural/Religious Problems

While the western type of education was embraced in the southern parts of Nigeria, it was held suspect in the Northern parts of the country where Islam was a dominant religion. Islamic education was instead preferred in the North. It became obvious that where Western education was used as a standard, the gap between the North and the South became clear. The scant attention given to women's education in the northern parts of Nigeria further widened the educational gap between the North and the South. The situation has now improve remarkably, but the gap is still wide. When we talk of egalitarianism which is a cardinal objective in the new policy on education in Nigeria, one wonders whether the objective goes beyond a theoretical formulation or political wishful-thinking. If opportunities for education for all by the year 2000 by instalments (some arriving by the year 2010 A.D). Something dramatic needs to be done to even up the educational gap that has been brought about either by cultural/religious differences or by the difference between urban and rural areas where the impact of education is just being felt. The nomadic people are coming along, but there is still a yawning gap between this group of learners and the rest.

It is gratifying to note the tremendous encouragement which the governments in the Northern States are giving to their students through scholarship awards and other incentives to whet their appetite for education. This trend, in addition to the proliferation of schools in the area to beef up enrolment figures will go a long way in bringing more citizens to benefit from education by the year 2000.

9. **Teacher Mobility in Nigeria**

Qualitative education may not be attained by the year 2000 if the present restriction imposed on the mobility of qualitative teachers is not relaxed. The current practice of Forcing" Nigerians to sign contractual appointments in parts of their own country has a retarding effect on the willingness of teachers to move to such areas where the "none indigenes" are hired on contract basis. We must allow expertise to circulate freely so that those parts that lack it will be able to get served. Sciences teachers in particular are in short supply. But the present restriction insidiously retards teacher mobility so that while there is a surplus in one part of the country, there is scarcity in other parts. This practice is inimical to qualitative education.

10. **Population Explosion**

Qualitative education becomes expensive when one considers the soaring birth rate in the country. The family planning campaign has not caught fire properly in Nigeria, though the awareness has abundantly dawned on the public. The number of wives per one man, and the number of children per family are extremely hard to legislate upon in this country since the issue of family planning has badly got entangled into some religious and traditional constraints. The issue of education for all by the year 2000 is therefore a debateable one because it is nearly impossible for the government or somebody else to educate the entire army of children per family. In some cases, one father has twelve or more children. His resources become overstretched. Some children have to hawk food on the street, others have to roam public places as beggars and others end up as delinquents. Qualitative education is sensitive to bulging numbers particularly when those contributing to the soaring numbers make little contribution in terms of learning resources. The population Bureau must not be daunted in their effort. The public enlightenment agent also needs to intensify their publicity and campaign against the overproduction of children. Otherwise the quality of education will still be poor by the 2000.

Relevance

An important aspect of quality is the relevance of the education given to pupil and students at school. The concept of relevance in education is not new in the development of Western education in Africa, though the name has changed with time. Prior to 1960, the word in current use was adaptation. The British educational policy in Tropical Africa provided for the adaptation of the educational system among other things to "aptitudes, occupations, and traditions of the various peoples, conserving as far as possible all sound and healthy elements in the fabric of their social life'. In spite of this declaration of intention, the products of the colonial educational institutions were in most cases more English than African, and affected English style of life, sense of values and attitudes. What many educationists fail to understand is that while British policy encouraged adaptation at the primary level of education, it strongly supported conformity at higher levels and strictly supervised adherence of colonial university colleges by a system of special relationships, to British university standards and traditions. The products of these institutions became the pace-setters and influenced the products of the colonial educational systems at all levels.

The lesson learnt from this experience is that the educational system which produced English Africans (or French Africans) can also produce Nigerian Africans. Education is a system; it is made up of complex relationships. When one part of the system is changed, it affects the entire system. The effect of qualitative education should be pervasive; it should be total, rather than ad hoc or piece-meal solutions to selected aspects of the educational system. It should aim at changing the whole man. Relevance in education should not only reflect in the goals of education, but also the content of the study programmes, the structure, programmes for training teachers, educational administrators, supervisors and other personnel as well as educational research and information.

Adoption of educational policy which embodies national goals of education is a political decision. In consequence, qualitative education should not be viewed in isolation from other aspects of national policy. Relevance in education should be related to the national political and socio-economic framework in which the educational system operates. Relevant educational policy should include liberating the nationals of this country from the consequences of past colonial experience, and the establishment of a national identity which is deeply embedded in authentic African culture and experience. The policy on qualitative education should define in lucid terms, the type of man the educational institutions are expected to produce in Nigeria.

A man who has an intellectual understanding of his cultural roots in the African environment, aware of his political right under the Constitution, his civic responsibilities, and duties to his nation, state, community and family, appreciative of the direction of social change and development taking place around him and adequately prepared to make his optimum contribution to those areas of national development to which his education has best fitted him.

Quality in education in nation-building should give access to basic education which should be common to all as a right of citizenship, eliminate disparities which exist between the sexes, social groups, the rural and urban areas, the physically handicapped and mentally retarded and various sections of the nation. In nation-building, the contribution of every segment of the population counts. For this reason, there should be a fair and equitable distribution of budgetary resources between school and out-of-school education, combing priority to primary education, combing priority to primary education which is the type of education which the majority of people in Nigeria will receive, with adult education to offset the consequences of restrictive access to formal education, and ultimately eradicate illiteracy and innumeracy which have been the bane of national development in vast areas of the continent. There is no qualitative education which is cheap, either in terms of human development or material and fiscal resources.

Content of Education
The relevance of the content of education is an essential aspect of qualitative education. In addition to improving the content of traditional school subject and deriving effective methods of teaching, our attention will be drawn to those learning experiences which have received scant attention in our study programmes.

Since education prepares individuals for citizenship and participation in development, civic education should receive adequate attention in the curriculum of our schools. Curricular activities should indicate a trend towards tapping the Nigerian resources of African traditions; more extensive use of Nigerian languages as teaching media, and as carrier of authentic Nigerian culture, conveying values and attitudes which have contemporary relevance. Greater attention than before needs to be paid to the teaching of agriculture, rural crafts, science, mathematics, local history and the environment, technology and the expansion of vocational and technical education, the examination system; as well as the theory and practice of inter-group relations and co-operation.

School libraries constitute an important item in the equipment required for qualitative education. If Nigerian education is to improve qualitatively in the perspective of life-long education, and in the direction of training students to educate themselves, find out facts and figures for themselves and reason for themselves, then we must equip our institutions with the necessary facilities for such approach to education. This approach should include not only well equipped school libraries, but laboratories, workshops, and a variety of repositories for educational information to and teaching: films, cassettes and slides. In order to approximate content of education more closely to national policy on qualitative education and to achieve greater relevance, there must be a constant re-appraisal and evaluation of the internal consistency and external efficiency of the system to ensure that the content of education serves the purposes for which it was intended.

Teacher Training
Of all the educational problems which beset Nigeria and many independent African countries today, none is so persistent and formidable, or as compelling as the problem of training competent teachers in sufficient numbers. The demands for more and better schools in parts of the country, the need to diversity individual curriculum to take account of national aspirations and individual expectations; the need to relate education closely to the child's environment; the desirability for appropriate textbooks and other instructional materials, which take account of local data, the national need for competence in vocational and technical skills, and the dual objectives of educating the Nigerian citizen of today and tomorrow. All these tasks cannot be accomplished effectively without the aid of well trained and competent teachers. The type of teacher required for nation-building must carefully be selected and train, continually upgraded to keep abreast of new developments in his field through regular in-service training and refresher course; and must be professionally developed and encouraged by adequate remuneration for the service to the nation to enable the teacher to enjoy parity of esteem with the other professions.

Educational Management and Supervision
Quality in education can be achieved by realistic planning, administration and supervision. Qualitative management of education should be concerned with increasing efficiency, and avoidance of waste. Educational planners, administrators, and supervisors should also be adequately trained; and should possess a clear understanding of the objectives of development and the expertise to achieve them. One implication of qualitative education is the need to ensure that there is a good

system of supervision and quality control within the educational system. In order to achieve these objectives, the White Paper on the Nigerian Philosophy of Education defines the new role of the supervisor as an adviser, a guide, a catalyst and a source of new ideas. It is this type of supervisor who is likely to provide qualitative education.

The Federal Government in Nigeria realised this need many years ago when it established the Federal Inspectorate which was not entirely welcome by the states. Some states regarded it as an intrusion on their authority to supervisor their own schools. Several states realise that both Federal and State Inspectors have to work together to ensure qualitative education and to prevent the creation of wide disparity in its provision among the states. Qualitative education requires a new educational structure, with a clear articulation of one level of education with another and the formal with non-formal education, in the perspective of life-long education and closer link between school and society, education and productive work. To achieve these structural changes will require intensive research to enable educational innovation to be based solidly on well-attested facts, rather than on fiction and faith.

Summary
This chapter has been focused on the quality of education which is attained principally through an adequate curriculum and teaching efficiency. The conditions that affect the curriculum and teaching ultimately affect the quality of education. The ten critical factors which inhibit qualitative education have been listed and discussed of the proposed solution are effective; African might confidently march towards an apogee of qualitative education in the interest of nation building by the year 2005.

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CHAPTER 9

Drug Abuse among Nigerian Youths and Its Impact of Technical Vocational Educational Training (TVET) in the National Development

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Abstract

The paper described the used of drug among youths in Nigeria and it implications towards technical and vocational training education in Nigeria. However, the impact of drug abuse has posted series of burden in the quest to national development; the study examined the social, psychological and emotional destructions of drug abuse among Nigerian youths and how it affected the growth and development of the nation, particularly, in the area of training. The Psychoactive substances or drugs can be said to be global calamity found among such diverse people from across the globe. Nigeria is one of the victim, where youths have demonstrated actively in the area of drug such as smoking of Indian hemp, cocaine, heroin, codeine, urine, alcoholic, and other forms of intoxicated substances that would affects their psychological thinking. However, the study was basically conceptual, data was drafted through secondary source, collections and data explanation were directly from valid second hand information such as books, journals, internet, magazines, and many more. The applications of frustration aggression model, grid and grievances theories were introduced so as to identify the pattern of relationship the relationships between drug abuse among youths in Nigeria and its effects towards national development. Particularly, in the areas of skills, training and development of youths, finally, the study looked at findings, which

revealed that, several skills acquisitions programmes were established with the aim of promoting the socio and economic status of the youths in Nigeria, due to engagement of drugs abuse among Nigerian youths the programmes have become ineffective. The study therefore, recommends ways in improving the effectiveness and efficiency of those programmes so as to enable Nigerian youths in developing dependent attitudes and to stay away from any form of drug abuses. The study virtually, lines some vital conclusions as ways of improving the number of youths engaged in to drug abuse.

Keywords: *Drug, Abuse, Youths, Nigerian and National Development*

Background of the Study

According to a United Nations Office on Drugs and Crime (UNODC) Report (2005), some 200 million people, or 5 percent of the world's population aged 15 - 64 have used drugs at least once in the last 12 months – 15 million more than the previous year's estimate. Likewise, according to the World Drug Report (2005), the use of illicit drugs in all nations has increased in recent years. The report goes on to note that the increasing availability of a variety of drugs to an ever widening socio-economic spectrum of consumers is disconcerting, although the main problem at the global level continues to be opiates (notably heroine) followed by cocaine. However, numbers of programmes and policies were introduced to beautify the lives of the youths in Nigeria such as "PEP" "NAPEP", "NYSC", "AMINESTY PROGRAMME", FADAMA 11, FADAMA 111, SURE-P, & N. POWER PROGRAMMES. Increasingly all of these programmes were created with primary objectives, that is to exposed youths on skill acquisitions programmes and to empowered them so as to reduce the number of drug abuses and other crime against humanity.

Statement of the Research Problems

It is unfortunate that Nigeria is a blessed country, originated with weak and accounts for the highest percentage of drug abuse in Africa such has been resulted to high rates of unemployment, generalized illiteracy, and poor empowerment programmes among youths. The increasing spread of political activities have manufactures political dugs, kidnapping, human trafficking, Boko Haram, raping and other forms of social problems that affected the significant number of people in human society. Gellman, (2011).

The General Objective of the Study is to explore the Role (TVET) as a Spirit of Innovation and Youth Employment in Nigeria

1. The specific objectives are to examine the impact of drug abuse among Nigerian youths,
2. To identify THE IMPACT OF (TVET) as and empowerment strategy in Nigeria
3. To explain the roles of Nigerian government in improving (TVET) programmes among Nigerian youths
4. To offer recommendations in improving youth's empowerment programmes

Conceptual Framework

According to the World Bank report (1975:3), empowerment is a strategy designed to improve the economic and social life of a specific group of people while disempowered includes the rural poor. The group of the poor includes others as small-scale farmers, tenants and the landless. Meanwhile, Ekanem (2004:52) views empowerment as a means to extend the benefits of socio- economic and political development in the economy to the poorest among those who seek a livelihood in the rural areas (cited in Duru, n.d.). For the purpose of this study the researchers, argued that, empowerment as an approach developed by the government, non-governmental agency or stakeholders to enable the weaker ones adequate mobility and to enhance their socio-economic status in the society. All of these could improve the productivity and reduces the rate of drug abuse among youths. Whereas, poverty is defined as a severe deprivation of some basic human needs at the individual or household level inform of material and physical deprivation, this can be viewed as monetary term. In another view point is that poverty as the failure to attain basic capabilities such as being adequately nourished, living a healthy life, possession of skills to participate in economic and social-political life, permission to take part in community activities (Odeh and Okoye, 2014). Duru (n.d.) views poverty as a situation of low income and/or low consumption. By World Bank (1990), poverty is inability to attain a minimum standard of living (cited in Duru, n.d.). The concept of poverty is multidimensional and multi-facet in nature and the situation of poverty is depended on people to people, society to society, economy to economy and history to history. For more definition and concept of poverty, see Abdussalam 2014; Abdussalam & Abdul Wahab 2014.

Researchers, contributes towards the study concepts defined poverty as a person who could not eat, dress, get marry, visits qualify health personals, get good education, good environment to live and many more all of these are basic fundamental requirement of human development. However, if the government could be enable to introduce effective quality of live that would have effect on the social beings, and it would improve in the development of a nation.

Review of the Related Literature
Who Are Youths?
Youths particularly in the developing countries, are the driving force for economic development. They possess the potentials which if properly harness promotes economic, cultural, social and political values of a society (Usman, 2016). To Gwary, Kwaghe, Ja'afar-Furo, & Dennis (2011), youths are the young people in a society who are characterized by ample ideas, energy and new ways to seek life and face problems. The educated youths in particular, are more likely to adopt new innovations if they are involved in an activity. Isah (2015) opened that the youths are a cross-section of the country's population with abundant energy that needs proper channeling and harnessing for increase productivity. Empowerment in a nutshell is about creating/provision of condition conducive to enhance through motivation the performance of a person(s) (Jimoh, 2014). It is geared toward developing person's sense of self determination and enhancing his/her belief in self-efficiency.

The researchers, positions in respect of Isah, 2015, Jimoh 2014 & Usaman, 2016 that, youths are engine of development, and they were very true. However, if the government in position has declared some fundamental responsibility in established adequate (TVET) Programmes on youths, categorically, these skills learned from the youths would directly improve the socio-economic and political development of Nigeria and African in general. Similarly, on the basis of the argument, and contribution to knowledge, Arc. Muhammad. S. A. & M.D. Isah noted that, youths are the engine that could transformed modern agricultural development and could be supporting schemes in providing everlasting drug abuse and other of violent such as Boko Haram, Kidnapping, Rape, and human trafficking etc. among Nigerian youths. Such training such as education, and skills acquisitions programmes, would not only stop the youths from engaging into other forms of violence rather improved the country economic and at the same time enhances their socio- economic status as individual, which directly shall transformed the nature and pattern of their behavior. Increasingly, Isah, 2019, and Muhammed, argued that, if the government in power

who control all the economic and political resources and could not effectively and efficiently provide all of these schemes, to the youths and the rate of poverty is high it would produce insecurity, and backwardness to any nations particularly Nigeria. However, Jimoh, 2014 furthered argued that, thus, youth's empowerment through participation in entrepreneurial activities will not only create carrier opportunities for the teaming youths, but reduce insecurity and other related social violence that are associated with unemployment in the country.

Various Programmes Set to Empowered Youths in Nigeria
Thus, In-line with institutional and political constraints models on economic development, which emphasized the need for government to put in place major opportunities and new policies to eradicate poverty and provide more diversified employment opportunities and to reduce income inequalities, the successive governments in the country have at different times, came up with some specialized programmes, schemes and policies that are meant to develop the potentials among the teaming youths of the country Jimoh, (2014). Among the Central government programmes identified in the study area includes National Youths Policy of Nigeria (NYPN), Poverty Alleviation Programme (PAP); National Poverty Eradication Programme (NAPEP) under which there were Youth Empowerment Scheme (YES)' Youth Empowerment Programme (YEP)' Mandatory Attachment Programme (MAP), Capacity Acquisition Programme (CAP), Micro-Credit Programme (MCP). Others are State/local Economic Empowerment and Development Strategy (SEEDS/LEEDS); Fadama II, III; the Seven −Point Agenda and the present administration Youths Initiative for Sustainable Development in Agriculture (YISDA), Youths Enterprise with Innovation in Nigeria (YOU-WIN) and Subsidy Re-investment and Empowerment Programme (SURE-P) of the transformation agenda. The SURE-P which provide a whole range of activities and programmatic schemes, such as Graduate Internship Scheme (GIS), Community Services Scheme (CSS), Vocational Training Scheme (VTS), and Community Services, Women and Youth Empowerment (CSWYE). Ogwumike, (2002), Gwaryet'al, 2011, Oba, (2012), Dauda, (2016), Akande, (2014).

Each of these programmes, aimed at empowering the youths and other disadvantage segment of the population as explained in the aforementioned paradigm shift of the models adopted for the study. In Adamawa State, Achor, George, Mathias, Muazum & Elazeh (2011) noted that the previous governments (2007 – 2015), in an effort to work with the strategic principles of the National Policies and programmes in promoting

entrepreneurial activities particularly among the youths in the state, came up with a comprehensive measures to curb the menace of unemployment. These approaches were in three (3) phases under the Skill Acquisition Programme. Phase 1: a graduate cadre. Here unemployed graduates are enrolled into a six months vocational training programme during which they are stipends to start their business at the end. The second phase is the technical training programme, which is sub-divided into vocational, technical professional technical training and specialized works technical trainings. Unemployed youths are enrolled into a three year training programme. The third phase is the local apprenticeship skills meant only for the illiterates. They are trained in automobile repairs, tailoring and generator repairs among others. All the canters are expected to produce 2,300 technicians yearly. Other strategy in the state is in the area of agriculture. The state has a programme called Farming Skills Acquisition Programme (FSAP) which entails establishing in each of the twenty one (21) local government areas of the state, a farming skill acquisition centre where world best practices in agricultural production are impacted. All these efforts were geared toward self-sustainability, self-help, self-participatory, and equality within the context of community development as explained in the concept of empowerment Jimoh, (2014).

Based on these efforts of the governments, it has become imperative to assess the performance of the programmes in supporting youths to participate in entrepreneurial activities in the country and Adamawa State in particular. In Kebbi state number of beneficiaries have enjoyed from various schemes established by the government despite several attacks from corrupts leaders, yet it has some vital transformation in the area of dry farming system created by President Muhammadu Buhari 2015 where he launched the first dry farming schemes in the north eastern Nigeria, in Kebbi state. Numbers of youths have changed their socio-political status by engaging in rice farming activities through the collaboration of Central Bank of Nigeria.

Causes of Drug Abuse
Haladu (2003) gave the following as the main causes' Experimental Curiosity: Curiosity to experiment the unknown fact about drugs thus motivates adolescents into drug use. The first experience in drug abuse produces a state of arousal such as happiness and pleasure which in turn motivate them to continue. Peer Group Influence: Peer pressure plays a major role in influencing many adolescents into drug abuse. This is because peer pressure is a fact of teenage and youth life. As they try to depend less on parents, they show more dependency on their friends. In Nigeria, as

other parts of the world, one may not enjoy the company of others unless he conforms to their norms. Lack of parental supervision: Isah, 2019. Argued that, despite all of these factors that fundamentally, contributed in the quest that triggered youths into drugs abuse are students who have the believed that, talking drug will before exams or at the period of studies shall quick and easy learning, this directly harm individual behavior on drug abuse. Most of the broken homes, some divorces women, widows orphans and many more, and they could not have adequate and efficient provision of some basic social needs. They may one way or the other engage in selling drug and drug abuse.

Theoretical Framework (Social, Psychological & Biological Models)
The Genetic Addictive Theory "(addictive personality)." This concept presumes the existence of specific personality traits that characterize individuals who develop substance use or addiction disorders. The idea is that people are predisposed to developing addiction based on specific personality traits (in much the same way we might theorize a predisposition based on genetics).

Global Biogenic Theories: In this line of thinking, a person uses substances to avoid or blunt their negative or disturbing feelings. The underlying basis for the pain that is being medicated is usually attributed to trauma—adverse childhood experiences (ACES), sexual or violence trauma as an adult, or other experiences associated with post-traumatic stress. We do know that trauma experiences and post-traumatic stress disorder (PTSD) are commonly reported among women and men with substance use disorders. Yet another set of psychological theories address human information processing. This area of cognitive psychology explains how substance use can affect the way that a person takes in (perceives) information from the environment, stores the information as a short-term memory, moves information into long-term memory, and later retrieves information in order to influence behavior.

Drugs affect consciousness and behavior by influencing the activity of the neurons. Most psychoactive drugs whether stimulants (cocaine, amphetamines, ecstasy) depressants (alcohol, barbiturates, tranquillizers) hallucinogens (marijuana) produce their affects by either increasing or decreasing the synthesis, storage, release binding or deactivation of neurotransmitters. An agonist is a drug that increases the activity of a neurotransmitter. The agonists may (a)enhances a neuron's ability to synthesize, store or release neurotransmitters., (b)mimic the action of a neurotransmitter by binding with and stimulating postsynaptic receptor sites (c) bind with and stimulate

postsynaptic receptor site (d) make it more difficult for neurotransmitters to be deactivated, such as by inhibiting re-uptake. An antagonist is a drug that inhibits or decreases the action of a neurotransmitter. An antagonist may (a) reduce a neuron's ability to synthesize, store or release neurotransmitters. (b) Prevent a neurotransmitter from binding with the postsynaptic neuron by fitting into and blocking the receptor site on the postsynaptic neuron.

Drug use is responsible for a variety of cardiovascular problems, including rapid heart rate, irregular heartbeat, and increased blood pressure. Chronic use can cause the heart muscle to become enlarged, thick or rigid, making it harder for the heart to pump blood. According to one analysis, methamphetamine use can exacerbate pre-existing underlying cardiac disorders like coronary atherosclerosis or cardiomyopathy, which increases the risk of myocardial infarction or even sudden cardiac death. And people who misuse methamphetamine appear to be at the highest risk for cardiovascular damage like premature coronary artery disease. Significant anxiety, confusion, violent behavior, insomnia, and mood disturbances can all occur in people who misuse methamphetamine. In addition, a long-term user may present with various psychotic features such as paranoia, visual and auditory hallucinations, and delusions. Drug alters the brain structures that are instrumental in decision-making, hinders the ability to suppress counterproductive, useless behaviors, and impairs verbal learning. Drug use also is associated with structural and functional changes in the parts of the brain that are linked with memory and emotion, which could explain the emotional and cognitive problems seen in people who use drugs.

Cognitive Behavioral Therapy
    a. (CBT). Family therapy currently has the most research evidence for the treatment of substance abuse problems. Well-established studies also include ecological family-based treatment and group CBT. These treatments can be administered in a variety of different formats, each of which has varying levels of research support. Research has shown that what makes group CBT most effective is that it promotes the development of social skills, developmentally appropriate emotional regulatory skills and other interpersonal skills. A few integrated treatment models, which combine parts from various types of treatment, have also been seen as both well-established and probably effective. A study on maternal alcohol and other drug use has shown that integrated treatment programs have produced significant results, resulting in higher negative results on toxicology screens. Additionally, brief school-based interventions have been found to be effective in reducing adolescent alcohol and cannabis use and abuse.

b.   Medication. A number of medications have been approved for the treatment of substance abuse. These include replacement therapies such as buprenorphine and methadone as well as antagonist medications like disulfiram and naltrexone in either short acting, or the newer long acting form. Several other medications, often ones originally used in other contexts, have also been shown to be effective including bupropion and modafinil. Methadone and buprenorphine are sometimes used to treat opiate addiction. These drugs are used as substitutes for other opioids and still cause withdrawal symptoms. Antipsychotic medications have not been found to be useful. Acamprostate is a glutamatergic NMDA antagonist, which helps with alcohol withdrawal symptoms because alcohol withdrawal is associated with a hyperglutamatergic system.

c.   Dual diagnosis: It is common for individuals with drugs use disorder to have other psychological problems. The terms "dual diagnosis" or "co-occurring disorders," refer to having a mental health and substance use disorder at the same time. According to the British Association for Psychopharmacology (BAP), "symptoms of psychiatric disorders such as depression, anxiety and psychosis are the rule rather than the exception in patients misusing drugs and/or alcohol.

However, Muhammed and Isah, 2019. Try to filled the gabs on the views of the above scholars, that, Noted various, ways of acquiring drug abuse, however, the researchers increasingly, argued that, poor skills acquisition programmes, like exposing youths into entrepreneurship activities is the major causes of drug abuse among youth. Social Learning Theory of Drug Abuse: This theory maintains that dependence or abuse of drugs occurs as a result of learning. The learning could be by means of conditioning, instrumental learning or social learning. Human Security Analysis is adopted. Mahbubul, first drew global attention to the concept of human security. Human security perspective is a combination of threats associated with war, genocide, and the displacement of populations (Human Security Research Group, 2010). At a minimum, human security means freedom from violence and from the fear of violence. It is people centered, focusing on the safety and protection of individuals, communities, and their global environment (Human Security Policy Briefing, 2011). In-line with the two theories employed by the researchers, which are learning and human security analysis where all fundamental in understanding and explanation the subject matter. " drug abuse among Nigerian youths and the impact of (TVET) in national development" however, the fundamental argument was if the government need adequate security, there is need to introduced skill acquisition programmes on youth.

Findings

The study on this research yielded thorough understanding of several explanations that focused on the process of this reviewed paper. The researcher found that several scholars have contributed in several field on a several subjects of discussions, yet, little have been done in respect to drug abuse among Nigerian youths and the impact of TVET in the national development. However, some of authors are Anyadik and Emeh, 2012, argued that, entrepreneurship was one of the capabilities that enhance youth's productivity. Likewise, Adejo, 2012, noted that non-governmental organization, governmental policies. And international bodies should joined had in the efforts to promote the fundamental empowerment among youths in Nigeria,. Similarly, National Policy for Youths & Development 2018. Argued that, number of policies and programmes were created in providing youth empowerment. Hassan 2016, Usman, and Jimoh also cited that youths have been the engine of development but yet government could not be able to cater for their need. However, the fundamental arguments are, it was true that, the government have developed series of programmes since from 1999 to 2018. But after all consultations of relevant and valid literature it came to the notice of the researchers that, all of the programmes where not effectively and efficiently demonstrated in the mind of the youths, because it could not protect the Nigerian youths in terms of engaging into drug abuse and other related offences against humanity. Yet Nigeria government is doing nothing to solve this ugly problem. In a similar, vain, corrupt leaders have attacked number of programmes and policies established by the government, non-governmental bodies and stakeholders in transforming the lives of the youths, but indeed, the agencies that have the power to fighting corruptions were very weak. Therefore, they could not be able to handle it, this directly produce's high number of unemployment in the country. Finally, the researchers findings reveled that, if care is not properly talking the country will go out of control, due to number of unemployed, youths in the country.

Conclusion/Recommendations

Drug abuse among Nigerian youth and the impact of TVET in the national development, TVET is a beautiful transformation that promote socio-economic and political status of the youths in the third world nations particularly in Nigeria, and denied them engaging into drug abuse and other related offences. Series of policies were developed due to the fact that to improve the lives of Nigerian youths, but all in vain. General Olusegun Obasanjo, 1999-2006.President Umar Yardua 2006-2008. President Good Luck Jonthan 2008- 2015. President Buhari, 2015-date. Have produce's series of policies and programmes ranges from Poverty reduction

programmes, 7. Point Agenda, SURE-P & N-POWER programmes with the hope to provide and reduce the burden of poverty and unemployment among Nigerian youths. But indeed the programmes sets to benefit only few people.

Recommendations

1. Government should develop ways to improve the ideal factors such as skills acquisition, training, monthly allowances and many more schemes that will promotes the economic wellbeing of the youths in Nigeria.

2. Government should introduce entrepreneurship education in all primaries, secondary and tertiary; institutions so as to promote and create self-reliance among youths in Nigerian.

3. Extensive investigation on those hard drugs including the farms where they were planted should be search by join force authorities.

4. Parents should monitor their children and whom their children where interacting with.

5. All schools across the nation should introduces new pattern of teaching the effects of drug on national development.

6. Continuation of campaign against elicits at the federal, state and local level

7. Stiff penalty should be melted against anyone found dealing with hard drug.

8. Technical and vocational training should be introduced so as to engage the youth in various small scale businesses.

9. Technical schools such as polytechnics, technical universities and technical colleges of educations across the nations should as matter of urgency enact some measures that could tackle the rate of youth engaging into drug abuse, fine a way innovating the mine of the youths.

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CHAPTER **10**

People's Beliefs in Relation to the Disabled in Nigeria

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Introduction

The disabled are members of the society and they must necessarily interact with the significant aspect of the society for a healthy society. The social relay involving the disabled and the society is mediated by attitudes. Proper management of attitude issues may mean happiness and sustainable development for the disabled person. Over the years, there have been perceptions in special education literature on the disabled-society interaction. Some of these are:

i.   Professionals in special education agree that the main purpose of studying attitudes is to change them and thus facilitate the adjustment of the disabled person.
ii. Society's attitudes are negative and obstructive of the effort to improve the life of the disabled.
iii. Disabled persons complain that attitudes are their greatest burden.
iv. Attitudinal barriers remain a critical obstacle against meaningful acceptance and sustainable development of the disabled in the society.

These beliefs and perception about the disabled affects the level of involvement of the disabled in the society. It affects their social relations with other members of the society and further undermines their capacity to contribute to the development of the society. The aim of this paper is to examine people's beliefs in relation to disabled in Nigeria.

Emerging Issues and Challenges

Everyone likes to be the proud parent of a gifted, intelligent and talented child. But the birth of a defective, abnormal or handicapped child into the family brings sadness, misunderstanding, fear, disregard and sometimes a feeling of guilt. This is a world experience. The History of the education of exceptional children all over the world shows that in the middle ages children who were born abnormal/disabled where either destroyed or abandoned to their fate in the forest. They left them by the mountainsides to die or serve as food for the wild animals. They were not even considered fit to be used as sacrifices to the gods.

This practice was adapted because people believed that individuals who were disabled were possessed by demons or evil spirits. To show how ignorant they were at that time, some of them believed that actions taken were not against the disabled young infant but against the evil spirit. In the Nigerian traditional societies, the birth of exceptional children led to prayers and or sacrifices to the gods for appeasement as it was believed that such a birth was a punishment from the gods. Throughout history, no distinction was made on whether the handicapped person was deaf, blind, cripple or mentally retarded. The main issues were that he was different from the others and therefore had to be destroyed. It is important to emphasize that the inhumane treatment made to the handicapped/disabled could not be attributed to wickedness but was the result of fear and ignorance.

With the impact of Christianity and Islam, people began to realize how inhumane it is to destroy the disabled. In spite of the teachings of these religions, people still did not accept the disabled with open arms. Misunderstanding, shame, guilt and sometimes anger still remain. But instead of killing these children or abandoning them, parents of disabled children hide them in their homes where they remain completely dependent on their families all their lives. They are rarely associated with family members except on routine basis and are not even sent out on errands beyond the family compound.

Generally, the society looks at the disabled with disrespect. Those who believed in reincarnation have the strong belief that handicapping conditions is as a result of whatever crime, abomination or wicked acts the handicapped person committed in his previous world or past life. Thus he deserves the punishment. Others see all disabled persons incapable of taking care of themselves and therefore must be provided for. This idea has given rise to the feeling that the disabled must be helped to survive by giving them alms. Some people in the society, even among the educated

ones, still believe that the disabled persons can never attain heights reached by able persons. Consequently, most people are surprised when they see or hear of disabled person who achieved success in their chosen professions. Disabled persons are rarely trained by their parents are guidance and as such have narrowed job opportunities. Most of the qualified are discriminated on job placement. These emerging issues and challenges informed by social beliefs affect the opportunities the disabled in the society.

In spite of the negative perceptions and attitudes examined above, there are a few people who have considerable respect for the disabled and accept them as human beings worthy of respect. This belief is also informed by the potentials exhibited by some disabled. Given this prospect, it is important for the government to create education system that support teaching and learning of exceptional children. The society must therefore see them as normal and relate to ensure social inclusion.

Conclusion

As pointed out by Abang (1981:7), in parts of would, persons with disability are no longer looked down upon as people who could be silenced by dropping a Penney or two in their coin dishes. On the contrary, they are looked upon as individuals who have contributions to the upkeep of the community. If appropriately habilitated and rehabilitated, high expectations would be given to them, as indicated below:-

a) Would enable them have something doing.
b) To stop such persons from becoming baggers.
c) To enable them have a share in the economy of the community/nation.
d) To enable them contribute in the economic development of the nation.
e) To enable them raise families of their own.
f) To bring back the disabled persons from economic isolation and segregation held on them by the normal persons.
g) To enable them regain worth, respect and independence.

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CHAPTER **11**

21st Century Transferable Skills at the Crossroads among Business Education Students in Tertiary Institutions in Nigeria: A Way Forward

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Introduction

Tertiary institutions offer education after post-secondary education. Post-secondary education includes universities, colleges, technical training institutes, community colleges, nursing schools, distance learning centres among others that prepare students for application of knowledge at an advanced level. These institutions need to make a paradigm shift in their delivery by emphasizing on transferable skill approaches which can be achieved through curricula reviews that go beyond simple delivery of cognitive mastery or affective mastery of disciplines to include achieving psychomotor domain goals which involves the acquisition of transferable skills like the ability to communicate, think creatively and make critical analysis among others. Business education is one of the programmes in the Nigeria education system agenda that is designed to develop comprehensive knowledge, competence and skills to its recipients. These skills include technical, soft, and transferable skills among others. Unfortunately, we all have had to deal with the evolving myths of the quality of graduates from our tertiary institutions of which

business education students are among. We continue to experience the shift in the ways in which business education students have regarded skill acquisition which is necessary for their living in the society. We still can remember when graduates were placed in employment at graduation because they acquired the needed skills. In the current situation, however, the reverse seems to be the case. We are left with a lot of crossroads to address in order to ensure that business education equips its recipients with 21st century transferable skills.

Today we are in a society that challenges us to demonstrate our relevance through our skills and for a long time now, skill acquisition in tertiary institutions in Nigeria among business education students has been at the crossroads leading to un-employability of many graduates of the programme. The challenges which are making transferable skills not to be addressed decisively make overcoming skill acquisition worrisome. Hence, the specific objective of this paper is to determine:

1. To determine 21st Century transferable skills required of business education students
2. To investigate the means of inculcating 21st Century transferable skills in business education students.
3. To suggest a way forward for inculcating 21stCentury transferable skills in business education students.

21st Century Skills and the Nigerian National Policy on Education

Tertiary institutions in Nigeria are guided by the national policy on education. It is for this reason that it becomes expedient that for a successful inculcation of 21st century transferable skills, tertiary educational institutions to pay attention to the values enumerated in the national policy on education. Furthermore, the 21st century transferable skills have brought dramatic technological changes and challenges in the way people live, work and interact. To face such transferable skills challenges, tertiary institutions have to prepare students to inculcate appropriate values that enable one meet up the task. One would consider the value placed on 21st century transferable skills through education policy. To imbibe this 21st century skills, the national policy on education recommends that students should be able to:

1. Function as economically literate citizens through the development of personal or economic skills, a knowledge of social and government responsibility, and an understanding of business operations;
2. Demonstrate interpersonal, teamwork, and leadership skills necessary to function in multicultural business settings;

3. Develop career awareness and related skills to enable them to make viable career choices and become employable in a variety of business career;
4. Select and apply the tools of technology as they relate to personal and business careers;
5. Communicate effectively as writers, listeners, and speakers in social and business settings;
6. Use accounting procedures to make decisions about planning, organising, and allocating resources;
7. Apply the principles of law in personal and business settings;
8. Prepare to become entrepreneurs by drawing from their general understanding of all aspects of business;
9. Understand the interrelationships of different functional areas of business and the impact of one component on another;
10. Develop the ability to participate in business transactions in both the domestic and international arenas;
11. Develop the ability to market the assets each individual has whether they be in the labour market or in the consumer goods market;
12. Manage data from all of the functional areas of business needed to make wise management decisions;
13. Utilise analytical tools needed to understand and make reasoned decisions about economic issues, both personal and societal.

The Concept of Transferable Skills in Education

In discussing different forms of transferable skills in education, some inter-related concepts come to fore. The concepts of transferable skills have received different names by different professionals from a variety of fields. Obi, Ile, & Chibuzo, (2020) contended that in the workplace, soft skills, such as people-related skills and personal skills are considered to complement hard skills, which refer to technical knowledge and occupational skills. While soft skills, such as etiquette, getting along with others, listening and engaging in small talk is intangible and hard to quantify. Many Scholars has painstakingly articulated the different forms of transferable skills needed in the 21st workplace. They have adopted different names for this concept, such as 21st century skills, soft skills, core competencies, generic skills, essential skills, vocational basic competency, people skills, people-related skills, personal skills, transferable skills, and employability skills among others.

Business education in the light of the national policy on education

The mission of business education as stipulated by the Federal Republic of Nigeria (2013) in her national policy on education is to provide students with the following:

i.   Business knowledge and workplace skills in preparation for initial employment and advancement in a career.
ii.   Background information for further study in the career
iii. Technology skills for personal and work-related environment
iv.   Leadership abilities for fulfilling career, social and civic responsibilities; and
v.   Career information and the development of personal qualities necessary for a successful career.

Transferable Business Education Skills at the Crossroads

In the past, business education graduates of our tertiary institutions were looked up to occupy important positions as secretaries, typists, clerks, teachers among others in large organisations with promises for comfortable room and board. They were valued and engaged because they had skills made them relevant to the society. Their employability was as certain as immediate. But the story is no longer the same in recent times. While tertiary institutions continue to turn out many graduates of business studies, their employability is no longer guaranteed in the labour market. The problem may not be unrelated to the issue of inability to exhibit the 21st century transferable skills in business education. Certain questions may be pertinent at this time: How many citizens sincerely see business education as a valued programme to imbibe transferable skills which contribute to improving the wellbeing and standard of living of its recipients? What are the government and relevant ministry doing to reverse the trend of poor perception of business education programme? How many scholarship programmes have actually been designed to promote and encourage the study of business education? Do the younger ones actually want to be business educators or do they find business education programme as a last resort? Do we have a laboratory with enough equipment such as computers, printer, scanners, photocopiers among others, library with up-to-date books to equip students with 21st century transferable skills.

Determining the 21st Century Transferable Skills in Business Education Students

Transferable skills are seen as those qualities that can be transferred from one job to another (Obi, Ile & Chibuzo, 2020). According to Abbot cited in Appleby (2017) transferable skills are defined in many ways and are called by many other names

including soft skills and 21st century skills. Transferable skills are the hiring ingredients that employers look for in filing open positions and the applicant tracking software uses to match business education graduates into available positions in the workplaces. Bernie, T & Fadel, C & Wiley (2012) described transferable skills as those skills that are needed in any job and which enable people to participate in a flexible and adaptable workforce. Transferable skills are therefore defined as the skills and abilities that business education graduate acquires during any activity he/she perform in their life. These skills when acquired due to its flexibility nature can be transferred for use in another situation. In addition, these concepts have been implemented within different policy contexts. At present, it is difficult to claim that there is a comprehensive and systematic concept of transferable skills and subsequent implementation in Business Education. Transferable skills still tentatively remain a highly cherished and valued commodity for business and about business. The expectations in the 21st workplace actually specify what constitutes 21st century transferable skills.

Transferable skills also include communication skill, problem solving skill, presentation skill, self- management skill, leadership skill, skills for negotiation, language, computer literacy, interpersonal skills. Other forms of transferable skills include: conveying information effectively, relationship management and conflict resolution, motivating, organizing, troubleshooting, establishing rapport, coordinating, coaching and facilitating, monitoring and assessing performance of oneself, individuals and organizations. Transferable skills also extend to such issues as: coordinating and guiding others to meet objectives and goals, multitasking with equanimity, lesson planning and curriculum development, active listening, critical thinking etc. The two transferable skills that will be focused on in the essay will be communication skill which encompasses oral and written communication and leadership skills. Communication skill requires an individual to demonstrate a solid understanding of oral, listening, reading and writing capabilities. It involves having the ability to orally justify and persuade people as well as to respond intellectually to questions, criticisms that might arise during the presentation. Communication is viewed to be an important transferable skill as it provides the basic means for relaying one's opinions, ideas and thoughts to other people. Employers expect their employees to be able to communicate properly both in the oral and written context. Employers normally use the following criteria to assess the communication skills of potential employees; whether they can speak and write efficiently, understand the message that is being relayed as well as conduct oral and written presentations to communicate information to their co-workers.

Leadership skills are the abilities that a person has to take control or manage the particular needs of an organization. Having leadership skills enables an individual to make effective decisions, manage other people to achieve or accomplish a certain range of tasks, encourage other people through motivation and take responsibility for certain tasks.

Inculcating 21st Century Transferable Skills in Business Education Students

Transferable skills are regarded as the most prided commodity in this 21st century workplace. John Dewey wrote that teachers should construct active learning opportunities, where students can be fully engaged with the material and play with ideas without being reprimanded for going too far afield (University's online education programs, 2018). Business educators should direct their teaching towards ensuring the process of acquiring competencies, knowledge, skills, attitudes, and the cultural norms of a society and enhancing its perpetual development. Babafemi, cited in Akpuru (2014) asserted that to prosper, grow and innovate, 21st century workplace, highly skilled business education graduates who recognize opportunities and prepare strategies that would help them embrace the increasingly sophisticated skills and digital competencies that lie ahead are needed (Future-Focussed Learning in Connected Communities, 2014). "The primary aim of education is not just to enable students to do well in school, but to help develop potentials that will enable them do well in the lives they lead outside of the school" (Ray McNulty, ICLE Iowa High School Summit, December 10, 2007).

The Way Forward

Transferable skills should be incorporated into business education students' preparation through:

1. Updating the curriculum of business education programme to include the inculcation of values for transferable skills
2. Training and re-training of business educators on the value of acquiring best practices approach on developing transferable skills
3. Scholarship programmes should be made available in order to enable students to see the need to acquire transferable skills
4. The government at all levels should as a matter of urgency make it compulsory that students should undertake professional placement yearly before graduating from business education programme in tertiary institution
5. There should be teaching techniques that will ensure that there is a way to incorporate integrated transferable skills development.

Conclusion

Transferable skills are defined in many ways and are called by many other names including soft skills and 21st century skills. It is important to recognize what has prompted the changes in business education programme in tertiary institutions to accommodate the development of transferable skills. Acquisition of transferable skills is at the crossroads in business education programme in tertiary institutions. There is serious need for all stakeholders to improve the value placed on business education in order to develop programme specifications given out comes in terms of transferable key skills needed for relevancy in the 21st in the workplace.

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CHAPTER **12**

Examining Social Studies Education as Strategy for Instilling Discipline for Social Transformation among Students of Secondary School in Ogun State

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Abstract

This research work examined Social Studies education as strategy for instilling discipline for social transformation among students of secondary schools in Ogun State. This study adopted a descriptive research survey design. The population comprised of all the secondary schools students in Ogun State. Simple random sampling techniques was used for this study and sample of One hundred and fifty(150) secondary schools students were selected from fifteen (15) secondary schools in Ogun State. Five (5) secondary schools students were selected from each secondary school in Ogun State. Questionnaire was the instrument used to elicit information required from the respondents. Four (4) research questions were formulated to guide the study. The data collected was analyzed using frequency counts distributed tables and Simple Percentage statistical tool. However, the findings indicated that; majority of the respondents agreed that teachers caned so as to punish students, also majority of the students disagreed that payments of the fines is not a way of discipline students. Therefore, it was recommended that: Social Studies education should be held in high esteem and be taught just like English education every day in the schools. Also parents should avoid conflict that can cause separation in which can bring about single parenthood.

Keywords: *Social studies, Education, Discipline, Secondary schools.*

Background of the Study

In the contemporary world, the issue of class management and discipline has become a bone of contention. Ask any teacher, whether newly employed or experienced what his/her biggest problem with students is about "discipline and classroom control" (Mezieobi2006). The school discipline is one of the frequent problems faced by most teachers throughout their teaching career. To them, discipline means punishment, pain and fear, so it is a negative word. It has to do with the correction of wrongdoers at home, in the school or at the place of work. Discipline is also a specific means used to punish offenders which is training through suffering, so it is a polite substitute for punishment. However, according to Adesina (2003), the word 'discipline' means a system of guiding individuals to make reasonable decision responsibly. It is also the action taken by adults to help a child change his or her behavior. Therefore, in all institutions of learning, discipline is very important because it trains individuals to develop responsible behaviour leading to a self-disciplined person. Discipline exposes students to the act of self-control and social chaos which can only be avoided if restrain is built into the character of the students (Adewuya, 2006). Discipline exposes children to ways of handling the challenges and obligations of living and equips them with the personal strength needed to meet the demands imposed on them by the school and later in adult responsibility (Adewuya, 2006).

Discipline makes it possible for parents to pass their values and attitudes to their children in an atmosphere of genuine love. It also stimulates tender affection possible by mutual respect between parents and children, between children and teachers. Adewuya (2006) believes that teaching children to be disciplined allow the live, humanity, and divinity of God to be introduced to young children. According to Ezebge (2000) discipline is the pillar for the success of a school in academic and extra-curricular activities. This is because effective and efficient management of all organizational organs depends on the overall degree of discipline of the executive and the input of all the people in the organization. Social transformation implies a fundamental change in society, which can be contrasted with social change viewed as gradual or incremental changes over a period of time. Social Studies education on the other hand, is a core subject in junior secondary schools in Nigeria, with the objectives of inculcating the learners an integrated form, basic skills, values and attitudes for useful living. The act of indiscipline among secondary school students has deteriorated and leadership role in moral training of schools seems to have disappeared. Parents to some extent contribute to the lack of discipline and moral growth of their children which had resulted to the increasing youth restiveness in the

country. This ugly trend can only be curbed through functional education because it serves as a tool for societal transformation and a vital instrument for societal change at all levels.

The introduction of Social Studies into Nigeria educational system was to augment the deficiencies inherent in our educational system (Makinde 2014). It is also to serve as a solution to emerging societal problems and to bring about national development and integration. Social Studies is therefore a subject in the school curriculum that is most suitable for transmitting the core societal values to the young generation. Therefore, this study intends to establish the impact of Social Studies as a strategy for instilling discipline among secondary school students for societal transformation. It is an eminent fact that indiscipline among secondary school students is on rampage. Although, the school is instructed to build the totality of the child even morally. It is of utmost displeasure that these trainings given by the school is not evident of the learners. Based on the trainings given, one would expect students of secondary schools to exhibit a good degree of good character that should be a model for the upcoming generation to emulate. It is this problem of increasing acts of indiscipline such as rule violation, disruptiveness, class cutting, cursing, bullying, sexual harassment, refusal, defiance, fighting and vandalism among secondary school students that this research intends to look into. As it is that failure to deal effectively with this low-level aggressiveness behavior contribute to poor individuals, school and community outcomes (Igba and Nweke 2004) with the aim of giving useful suggestion that would reduce such act.

Purpose of the Study

The purpose of this research work is to examine how social studies education can be used as a strategy in instilling discipline for social transformation among students of secondary schools in Ogun State. However, the specific objectives are to;
  i.   Identify means of indiscipline among secondary schools students.
  ii. Examine the causes of indiscipline such as vandalism, bullying, class cutting and other defiant acts among the students.
  iii. Examine how social transformations can be achieved through the use of social studies education.
  iv. Give useful suggestions that can be used to instil discipline among students, using social studies education as a strategy.

Research Questions

1. What are the means of discipline among students of secondary schools?
2. What are the causes of indiscipline among students of secondary schools?
3. How can social studies education be used as a strategy to instill discipline among students for social transformation?
4. What can be done to alleviate indiscipline among students of secondary schools?

Methodology

This research design that was adopted for this research work is descriptive survey design. The social unit of investigation was Odeda Local Government and this was achieved through administering questionnaires to some selected secondary schools students in Odeda Local Government which was stand for the whole population. The population comprises all students of Odeda Local Government area of Ogun State. This research employed the use of random sampling techniques, in which various students from Odeda Local Government were selected to give response on the issues of discipline among secondary school students. About 150 students were consulted through this method. These were taken to represent the entire population of the study, 30 students were sampled each from the 5 selected secondary schools. This research work tends to use questionnaire as a method of its data collection. The questionnaire deals with items which are meant to collect information on the use of social studies education as a strategy for instilling discipline among secondary school students for societal transformation by ticking either strongly agreed (SA), Agreed (A), Strongly Disagreed (SD), and Disagreed (D). The instrument used was validated by expert after going through the items prepared to collect data from the students while weak items was dropped or rephrased for qualitative evaluation. To analyze the data gathered on the field, this research work made use of simple mathematical percentage to analyze the data gathered.

Result and Data Analysis

Research Question 1: What are the means of discipline among students of secondary schools?

Table 1.

S/N		SA	A	D	SD	PERCENTAGE (%)
1.	Teachers canned so as to punish students.	30	63	13	24	100
2.	Payment of fines is a way of disciplining students.	22	49	23	56	100
3.	Suspension from school is another way of discipline.	38	67	17	28	100
4.	Grass cutting is a way of discipline.	41	54	25	30	100
5.	Embarrassing students in class is a way of discipline.	21	38	46	45	100

The table shows the responses of students on the means of discipline among student of secondary schools in Ogun State. In question 1, the table shows that 30 students strongly agree, 63 agreed, 13 strongly disagreed, while 24 disagreed. Therefore, majority of the respondents comprising of 63 students agreed that teachers caned so as to punish students. In question 2, 22 of the respondents strongly agreed, 49 agreed, 23 strongly disagreed, while 56 disagreed. Therefore, majority of the students disagreed that payment of fines is a way of discipline students. In question, 3, 38 of the respondents strongly agreed, 67 agreed, 17 strongly disagreed, while 28 disagreed. Therefore, according Ezegbe (2000) majority of the students agreed that suspension from school is another way of disciplining students.

In question 4, 41 of the respondents strongly agreed, 54 agreed, 25 strongly disagreed, while 30 disagreed. Therefore, 54 of the respondents which serve as the majority agreed that grass cutting is a way of disciplining students. To this end, in question 5, 21 of the respondents strongly agreed, 38 agreed, 46 strongly disagreed, while 45 disagreed. Therefore, majority of the students comprising of 46 strongly disagreed that embarrassing students is a way of discipline.

Research Question 2: What are the causes of discipline among students of secondary schools?

Table 2.

S/N		SA	A	D	SD	PERCENTAGE (%)
1.	Teachers canned so as to punish students.	33	58	27	32	100
2.	Payment of fines is a way of disciplining students.	34	55	19	42	100
3.	Suspension from school is another way of discipline.	39	73	15	23	100
4.	Grass cutting is a way of discipline.	58	30	11	31	100
5.	Embarrassing students in class is a way of discipline.	55	59	15	21	100

The table shows the responses of students on the causes of indiscipline among students of secondary schools in Ogun State. In question 6, the table shows that 33 students strongly agree, 58 agreed, 27 strongly disagreed, while 32 disagreed. Therefore, majority of the respondents comprising of 58 students agreed that early maturation causes indiscipline. In question 7, 34 of the respondents strongly agreed, 55 agreed, 19 strongly disagreed, while 42 disagreed. Therefore, majority of the students agreed that single parenthood causes indiscipline among students. In question 8, 39 of the respondents strongly agree, 73 agreed, 15 strongly disagreed. While 23 disagreed. Therefore, according to Makinde (2014) majority of the students agreed that negligence on the part of school authority causes indiscipline among students.

In question 9, 58 of the respondents strongly agreed, 30 agreed, 11 strongly disagreed, while 31 disagreed. Therefore, 58 of the respondents which serve as the majority strongly agreed that peer pressure causes indiscipline. To this end, in question 10, 55 of the respondents strongly agreed, 59 strongly disagreed, while 21 disagreed. Therefore, majority of the students comprising of 59 agreed that social media and internet facilities causes indiscipline among students.

Research Question 3: How can social studies education be used as a strategy to instil discipline among students for social transformation?

Table 3.

S/N		SA	A	D	SD	PERCENTAGE (%)
1.	Social studies teachers' moral and good behavior.	78	61	5	6	100
2.	Through social studies lesson, one can learn to be a good person.	53	63	10	24	100
3.	Having passed through social studies, classes, students learn to obey school rules and regulations.	49	62	3	26	100
4.	Social studies education should be held in high esteem and be taught everyday just like English education.	39	62	13	36	100
5.	Objectives of social student's lesson should center on grooming a responsible citizen.	45	70	8	27	100

The table shows the responses of student on how social studies education can be used as a strategy to instill discipline among students for social transformation. In question 11, the table shows that 78 students strongly agree, 61 agreed, 5 strongly disagreed, while 6 disagreed. Therefore, majority of the respondents comprising of 78 students strongly agreed that social studies teaches moral and good behavior. In question 12,

53 of the respondents strongly agreed, 10 strongly disagreed, while 24 disagreed. Therefore, majority of the students agreed that one can learn to be good person through social studies lesson. In question 13, 49 of the respondents strongly agreed, 62 agreed, 3 strongly disagreed, while 26 disagreed. Therefore, according to Aderalegbe (2004) majority of the students agreed that having passed through social studies classes, students learn to obey school rules and regulations.

In question 14, 39 of the respondents strongly agreed, 62 agreed, 13 strongly disagreed, while 36 disagreed. Therefore, 62 of the respondents which serve as the majority agreed that social studies education should be held in high esteem and be taught everyday just like English education. To this end, in question 15, 45 of the respondents strongly agreed, 70 agreed, 8 strongly disagreed, while 27 disagreed. Therefore, majority of the students that are 70 in number agreed that objectives of social studies lesson should centre on grooming a responsible citizen.

Research Question 4: What can be done to alleviate indiscipline among students of secondary schools?

S/N		SA	A	D	SD	PERCENTAGE (%)
1.	Teachers should have heart to heart talk with students instead of punishment.	73	30	7	20	100
2.	Students should be actively involved in making of school rules.	46	44	16	44	100
3.	Students caught in act of indiscipline should be expelled.	41	54	15	40	100
4.	Reward should be given publicly to good behavior among students.	69	53	9	19	100
5.	Bad behavior should be publicly discouraged among students.	63	46	16	25	100

The table shows the responses of students on what can be done to alleviate indiscipline among students of secondary schools. In question 16, the table shows that 73 students strongly agree, 30 agreed, 7 strongly disagreed, while 20 disagreed. Therefore, majority of the respondents comprising of 73 students strongly agreed that teachers should have heart to heart talk with students instead of punishment. In question 17, 46 of the respondents strongly agreed, 44 agreed, 16 strongly disagreed, while 44 disagreed. Therefore, majority of the students strongly agreed that students should be actively involved in making of school rules. In question 18, 41 of the respondents strongly agreed, 54 agreed, 15 strongly disagreed, while 40 disagreed. Therefore, majority of the student agreed that students caught in act of indiscipline should be

expelled. This was in line with Adewuya (2006) that social studies is capable of instilling discipline in the students

In question 19, 69 of the respondents strongly agree, 53 agreed, 9 strongly disagreed while 19 disagreed. Therefore, 69 of the respondents which serve as the majority strongly agreed that reward should be given publicly to good behavior among students. To this end, in question 20, 63 of the respondents strongly agreed, 46 agreed, 16 strongly disagreed, while 25 disagreed. Therefore, majority of the students comprising of 63 strongly that bad behavior should be publicly discouraged among students. In connection with research conducted by Adesina(2004)that Social studies is interdisciplinary in nature, therefore, it is a subject that can help in instilling discipline in students because it is embedded in moral attitude and behaviour.

Conclusion

Conclusively, it is of great importance to know that social studies education is an education that sees to the total building up of an individual. It is multidisciplinary and multidimensional in its approach which can be used to solve the societal problems that is multifaceted. Based on its foundation drawn from different subjects which are synthesized to make a whole, social studies education should be adopted when considering having a just and egalitarian society.

Recommendations

Based on the result obtained, the researcher submits the following recommendations:

1. In the stead of punishment at all times, teachers should have heart to heart talk with students.
2. It has been agreed that negligence on the part of school authorities causes indiscipline among students. Therefore, school authorities should actively wake up to their responsibility of moulding wards under them into what can be useful to them, the family, the society in which they belong, their nation and the world at large.
3. It is agreed upon that social studies education should be held in high esteem and be taught everyday just like English education.
4. It is also agreed upon that single parenthood causes indiscipline among students. Therefore, parents should be aware of this and find a way of sorting this out.

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