STRENGTHENING YOUTH CAPACITY AND COMBATING YOUTH RESTIVENESS THROUGH ENGINEERING RESEARCH AND INNOVATIVE EDUCATION IN NIGERIA

KIDZU T. OWEH
Department of Philosophy,
Federal University, Wukari,
Taraba State.

And

MAGDALYNE M. ABOH
Department of Philosophy,
Federal University, Wukari,
Taraba State.

Abstract

The focus of this work rests on Strengthening Youth Capacity and Combating Youth Restiveness through Engineering Research and Innovative Education in Nigeria. It applies philosophical questions and analysis to educational problems as they affect youth in the country. The outcome of youth educational standard through engineering research and innovation in education reflects youth who lack basic grasp in learning areas of science, technology, engineering and mathematics. The blame is not all on to the youth, but the use of unskilled and untrained manpower, who themselves may not have been properly trained to effect learning in the curriculum area. This depicts a failure in the objective of innovative education for the country's development match to greatness: hence the desire to meet the needs of sustainable Development in Africa. The work demonstrates the view that to combat perennial youth restiveness there is need to strengthen their capacity through engineering research and innovation in education which will give them hands-on-skill even after they have long left the colleges or university environments.

Nigeria, let alone other African countries have a lot of problems relating to education. Problems ranging from youth potentials or capacity, youth training, development through the home and school systems, the use of mother tongue and other foreign languages like English or French for concept development at various stages, to the role parents and teachers/educators play at the formative and growth stages, reaching the point at which they are left to themselves to make and take decisions: The peak at which restiveness takes over rational decision, especially when they have left school and the Yearly National Service. A lot of these problems, including the one in this work is man-made and not natural. Such is why the researchers have undertaken to investigate the problem confronting the nation with regard to innovation in education adopting engineering research in Nigeria, to attempt to discover why such problems persists every so often. Education is a lasting legacy parents can bequeath their children among other things. What happens if the youth are not given the best and proper education? Could such youth be of any good to themselves, their community and society? Whose responsibility is it to give the youth the standard of education required? The parents alone, the community, the teacher or the government? What causes youth poor performance in science and technology related disciplines such as engineering, physics, mathematics, chemistry, architecture and others? A lot of these philosophically grounded questions arise when an attempt to answer one, leads to another ad-infinitum. The researcher's aim in this work is to attempt a contribution to knowledge on how to strengthen youth capacity and combat youth restiveness through engineering research and innovation in education as the best bet for the future of the youth and the nation's development match.

Statement of Problem

The outcome of youth capacity and youth restiveness depicts government's non-commitment to policy formulation and execution, but delays, denials, rejections and complete summersault as regards education and research, especially in primary and secondary schools, technical colleges and colleges of education and even in polytechnics, monotechnics and universities. Again, governments non-commitment to policy execution replicates in the unseriousness and docile attitudes found in schools and colleges and universities. Moreso, at the primary and secondary school levels, unskilled and untrained teachers are recruited to effect learning in the curriculum area they are not qualified for. Since the learner's knowledge acquisition foundation is replete with sand, the tendency is, the youths knowledge edifice crumbles ever before they get into colleges and universities. The result and implication prove that:

i. The objective of producing sound youth with skills in innovative education bore no relationship with the task of capacity building in them to face future challenges.

ii. Government's shallow budgeting to education (as the field of inquiry involved in knowledge creation, teaching and learning) is majorly responsible for mass-production of unskilled youths.

iii. Little collaboration took place between the government and education authorities, and parastatals to improve teaching and learning in engineering research to help innovation in education.
iv. There is a gap existing between strengthening youth capacity and combating youth restiveness.

Significance of the Study

The significance of this study is to:
i. sensitize stake-holders (parents, teachers and the government) to be more pro-active, take active part and be serious in youth capacity building from early stages as a measure of combating youth restiveness in the future through engineering research and innovation in education.
ii. strengthen ties between the government's education policy formulators, implementers or executioners and the end-consumers (the public) for maximum output.
iii. motivate first the parents, and second, teachers to identify areas of talent in their children early enough and encourage them to participate actively in such areas identified to strengthen their capacity.
iv. motivate the youth to locate their talent in the subject area in reality to keep pace with specialization and professionalism.
v. encourage education policy makers to insist on employers to recruit based on areas of specialization in order to stabilize youth concentration on their chosen filed.
vi. eradicate the imposition of subjects by both parents and teachers on youth outside their choice and talent.
vii. avoid the imposition of teachers on schools either by the government or notable figures granted that such imposition may cause danger on the youth and the society.
viii. assist the government to know from time to time where there is lack in youth capacity building.

Research Questions

This work is guided by the following research questions:
1. Is strengthening youth capacity and combating youth restiveness a priority to government?
2. Does a nexus exist between youth capacity building and youth restiveness in the country?
3. Has youth capacity building to curb youth restiveness been effective via innovation in education?
4. Is engineering research and innovation in education a priority to government and proprietors of education?
5. Are education policies budgets and implementation targeted more at research and innovation in education?

6. Is youth restiveness in parts of the country a direct effect of non-commitment to youth capacity building sustenance over time?

Methodology and Instrumentation

The researchers adopted the Likert scale procedure and carried out a direct field sampling technique method whereby structured questionnaire was administered to youths (students) in the defined area (Federal University Wukari, Kwararafa University Wukari and National Open University, Wukari Study Centre). Nigeria has six geo-political zones. By random judgment, the researchers administered the questionnaire on the youths (students) comprising the six zones. The sample comprised 120 selected youths in the aforementioned three tertiary institutions. The questionnaires were shared into three groups of 40 per group. 40 questionnaires were given to Federal University Students, 40 given to Kwararafa Students and 40 to National Open University Students. The response options that were provided were exhaustive and mutually exclusive. In order for the researchers to collect valid and reliable answers from the respondents, the structured response format was utilized. The survey response options adopted in the questionnaire were used. Internal reliability, and construct validity of the questionnaire were determined. The significant differences between the scores of the students of the three tertiary institutions in Wukari indicated that the questionnaire had satisfactory construct validity. The reliability showed a stability of measures and internal consistency of the research instrument measured, and on the instrument scores. The data are reliable because notwithstanding the differences between the scores, they yielded positive results. The research findings are genuine because the researchers measured all that they ought to measure. One week was allocated for distribution and collection of all the questionnaire from the respondents who freely responded to the questions.

Data Analysis/Findings

The analysis in Table 1 representing Federal University Wukari on strengthening youth capacity and combating youth restiveness through engineering research and innovation in education shows that 25 respondents strongly agreed that there are variable responsible for youth restiveness in parts of the country.

Such variables include:

i. Government's non-commitment to youth capacity building over time, but making policies, budgets and implementation which do not target education research, engineering and innovation in education effectively to arrest/curb youth restiveness early enough.

ii. Cultural, ethnic and religious interference in strengthening youth capacity and combating their restiveness through engineering research and innovation in education. Nigeria is made up of so many cultural, ethnic and religious groups. The tendency is for one ethnic group to cry foul of being marginalized when government's policies and

implementation programmes do not favour them. For instance, implementation of education policies and programmes in the north of the country has a marked difference with that of the south. One country with different rules and regulations for one situation. Much talk about education but less action to back such talk and policies. The leadership at the top of policy formulation and implementation is hamstringed by ethnic and religious concerns rather than national education demands and desires of the citizens.

Taking the highest value of respondents therefore, Table 1 representing Federal University Wukari on strengthening youth capacity and combating youth restiveness through engineering research and innovation in education shows that 25 respondents strongly agreed that youth restiveness in parts of the country is a direct effect of non-commitment to youth capacity building sustenance over time. Table 2 representing Kwararafa University on strengthening youth capacity and combating youth restiveness through engineering research and innovation in education shows that 26 respondents strongly agreed that youth restiveness in parts of the country is a direct effect of non-commitment to youth capacity building sustenance over time. Table 3 representing the National Open University Wukari, on strengthening youth capacity and combating youth restiveness shows that 30 respondents strongly agreed that youth restiveness in parts of the country is a direct effect of non-commitment to youth capacity building and sustenance over time. The response values from Kwararafa University and the National Open University show some high degree of government's indifference of not giving priority to strengthening youth capacity and combating youth restiveness. This therefore gives room for youth restiveness in parts of the country.

Table 1: Analysis Showing Strengthening Youth Capacity and Combating Youth Restiveness through Engineering Research and Innovation in Education, Federal University, Wukari

S/N	QUESTION	SA (40 %)	A (20 %)	D (20 %)	SD (20 %)	TOTAL (100 %)
1.	Is strengthening youth capacity and combating youth restiveness a priority to government?	15	3	2	20	
2.	Does a nexus exists between youth capacity building and youth restiveness in the country?	19	11	5	5	
3.	Has youth capacity building to curb youth restiveness been effective via innovation in education?	10	5	10	15	
4.	Is engineering research and innovation in education a priority to government and proprietors of education?	10	5	5	20	
5.	Are education policies, yearly budgets and implementation targeted more at research and innovation in education?	15	2	18	15	

6.	Is youth restiveness in parts of the country a direct effect of non-commitment to youth capacity building sustenance over time?	25	8	3	2	
	TOTAL RESPONSES	95	34	43	67	
	TOTAL PERCENTAGES	(40 %)	(20 %)	(20 %)	(20 %)	100

Table 1 above, question 1 shows that 20 respondents strongly disagreed on government strengthening youth capacity and combating youth restiveness as a priority. 20 respondents strongly agreed a nexus exists between youth capacity building and youth restiveness in the country. 15 respondents strongly disagreed on effectiveness of youth capacity building to curb youth restiveness via innovation in education. 20 respondents strongly disagreed on engineering research and innovation in education as a priority to government and proprietor in education. 18 respondents disagreed on education policies, yearly budgets and implementation targeted more at research and innovation in education. 25 respondents strongly agreed youth restiveness in parts of the country is a direct effect of non-commitment to youth capacity building sustenance over time.

Table 2: Analysis Showing Strengthening Youth Capacity and Combating Youth Restiveness through Engineering Research and Innovation in Education, Kwararafa University, Wukari

S/N	QUESTION	SA (40%)	A (20%)	D (20%)	SD (20%)	TOTAL (100%)
1.	Is strengthening youth capacity and combating youth restiveness a priority to government?	10	5	20	5	
2.	Does a nexus exists between youth capacity building and youth restiveness in the country?	11	13	10	6	
3.	Has youth capacity building to curb youth restiveness been effective via innovation in education?	6	7	7	20	
4.	Is engineering research and innovation in education a priority to government and proprietors of education?	10	5	23	2	
5.	Are education policies, yearly budgets and implementation targeted more at research and innovation in education?	7	10	19	4	
6.	Is youth restiveness in parts of the country a direct effect of non-commitment to youth capacity building sustenance over time?	26	4	5	5	
	TOTAL RESPONSES	70	44	84	42	
	TOTAL PERCENTAGES	(40%)	(20%)	(20%)	(20%)	100

Table 2 above, shows that 20 respondents disagreed on strengthening youth capacity and combating youth restiveness as a priority to government. 13 respondents agreed a nexus exists between youth capacity building and youth restiveness in the country. 20 respondents strongly disagreed on effectiveness of youth capacity building to curb youth restiveness via innovation in education. 23 respondents disagreed on engineering research and innovation in education as a priority to government and proprietor in education. 19 respondents disagreed on education policies, yearly budgets and implementation targeted more at research and innovation in education. 26 respondents strongly agreed youth restiveness in parts of the country is a direct effect of non-commitment to youth capacity building sustenance over time.

Table 3: Analysis Showing Strengthening Youth Capacity and Combating Youth Restiveness through Engineering Research and Innovation in Education, National Open University, Wukari

S/N	QUESTION	SA (40%)	A (20%)	D (20%)	SD (20%)	TOTAL (100%)
1.	Is strengthening youth capacity and combating youth restiveness a priority to government?	12	6	18	4	
2.	Does a nexus exists between youth capacity building and youth restiveness in the country?	16	10	9	5	
3.	Has youth capacity building to curb youth restiveness been effective via innovation in education?	8	5	5	22	
4.	Is engineering research and innovation in education a priority to government and proprietors of education?	11	4	4	21	
5.	Are education policies, yearly budgets and implementation targeted more at research and innovation in education?	12	3	20	5	
6.	Is youth restiveness in parts of the country a direct effect of non-commitment to youth capacity building sustenance over time?	30	4	4	2	
	TOTAL RESPONSES	89	32	60	59	
	TOTAL PERCENTAGES	(40%)	(20%)	(20%)	(20%)	100

Table 3 above, shows that 18 respondents disagreed on strengthening youth capacity and combating youth restiveness as a priority to government. 16 respondents agreed a nexus exists between youth capacity building and youth restiveness in the country. 21 respondents strongly disagreed on effectiveness of youth capacity building to curb youth restiveness via innovation in education. 21 respondents disagreed on engineering research and innovation in education as a priority to government and proprietor in education. 20 respondents disagreed on education policies, yearly budgets and implementation targeted more at research and innovation in education. 30

respondents strongly agreed youth restiveness in parts of the country is a direct effect of non-commitment to youth capacity building sustenance over time.

Critical Evaluation

Wim de Villiers, Rector and Vice-Chancellor, Stellenbosch University, in his article "Mandela's belief that education can change the world is still a dream" cited Mandela as saying that "Education is the most powerful weapon which you can use to change the world". According to Mandela:

"Education is the great engine of personal development. It is through education that the daughter of a peasant can become the head of the mine, that a child of farm workers can become the president of a great nation. It is what we make out of what we have, not what are given, that separates one person from another" (Long Walk to Freedom, 1995).

Mandela's passion for education in the passage depicts resilience and innovation (making out of what one has and not dependent on others) as mark of an educated person. However, Villiers summed it up that educational institutions have a responsibility to contribute to students (youth) development "through the empowerment of individuals" and "through the generation of knowledge" (The Conversation, 2015).

Empowerment of individuals and generation of knowledge are aspects of strengthening youth capacity. To strengthen youth capacity is a way of preventing future youth restiveness. It involves the building of long-term-projects either at human capital development capacity or at the infrastructural development level. It involves the strengthening of young people's ability to prevent pre-meditated and unforeseen conflict, while encouraging them to promote inter-community, state, regional or zonal understanding and co-operation. It goes beyond the establishment of the ministry of youth, sports and national development, to strengthen their capacity to, by themselves, form and engage multiple youth organizations and cause them to support various initiatives for peace in the country. It means training them in conflict management, youth leadership and techniques in policy and decision making. Perhaps, this is why Plato thought of education (in this case engineering research and innovation in education) as a rigorous scheme, an instrument capable of moral reform which can mould and transform human souls, and inculcating the right values of selfless duty towards all. It involves each individual performing his/her function to attain fulfillment in society (Mukherjee and Ramaswamy, 2005).

Education is a means of attaining the Needs of Sustainable Development in Africa through engineering research. Engineering research is said to include the field of inquiry that is involved in knowledge creation. In so doing, its aims and objectives are to define, inform and improve teaching and learning in science, technology, engineering, mathematics and other nature-based disciplines. It warrants scholarship in teaching that demonstrates creativity. It involves improvements in designing and

adaptation to new system. It involves reform in the production of quality and quantity of knowledge through research to address the teaming problems in globalization.

Sellingo (2017), a Professor of Practice and higher education strategist on university innovation and leadership, in his *"A Blueprint for How We Can Beat the Robots"* viewed innovation in education as proposing a way of education that would educate the next generation of youth who become men and better placed to manage their professional lives as "Professions themselves are Disappearing". Innovative education asks questions like how long will one's job last? Until retirement? If not, then what? The best answers would be to get the individual well trained for the inevitable what is next, since anyone does not know or understand yet what is to be.

Reacting to Sellingo's view about teachers not doing enough with innovation in education, Brian Gough, a high school teacher in Washington D. C. said we as teachers "spend a lot of time discussing options and helping each student pick up the right fit for them". He put the blame on the family, and/or counselors, stating that students are provided little guidance by them. In his view, innovative education should not be left to teachers alone. It should include the family and counselors to give youth the right choice from early stage of life (jeffselingo.com).

Commenting on Socrates' view of technology about its impact concerning writing as a technological skill (recalling a conversation between Theuth, the god Hermes and inventor of writing, and Thamus, king of Egypt) whether "writing will make the Egyptians wiser and give them better memories", Malcolm Payton, said Thamus, the Egyptian King is not convinced such technology or discovery would do better than creating forgetfulness in the learners' souls; the reason being that their memories will not be in use, but they will rely mostly on "external written characters" which would not let them remember for themselves – causing them to be omniscient and broadly know next to nothing (network www.E3net.org.uk). Writing remains a deserved invention. But a truth of the fact is, how many of our youth understand writing as a skill other than muttering the words. A lot more of the youth can speak, while we do our best to bring them up, but cannot write or construct writing well.

Think of it, you see them send half-backed text messages on mobile hand-sets which are incomprehensible or unreadable to make a meaning. Technology in a sense is putting thought into reduced effort, where much of human effort and labour summed up to machine work with little constraint. The question Payton had asked is, "inspite of all their familiarity with technology, do our young people have… when and how to apply the contextualization rules…?" for him, "we have a responsibility to give future generations the skills and perspicacity to use tools well… not merely those who can access a vast array of information that is ultimately meaningless."

The political system of any liberal democratic country moves the economic system and vice-versa. Indeed, global economic expansion of advanced countries grow because their policy makers comprised a mix of trained personnel with engineering education background. This also determines how their economic, political and cultural

progress follow through innovation in education (The National Interest, 2017). However, relating strengthening youth capacity and combating youth restiveness through engineering research with education content in Nigeria, the emphasis on attaining a permanent and functional literacy, numeracy and effective communication skill by 2030 seem impossible (Asuquo and others, 2005). A factor responsible for this is the relative newness of engineering research programme in the country. While Western Education came into Nigeria at about 1842, engineering research and innovation in education is relatively new. And this newness, caused a lot of people in society not to understand the special and specific roles it plays yet.

Hence, even in schools where awareness of discipline is expected to be high, most teachers, proprietors and educationists tend to misconstrue the functions of the discipline. Education is today a costly venture in the country. For this reason, it requires a lot of funds. Government's non-commitment to policy decisions and summersault, coupled with insufficient funds allocated to schools, colleges and universities to run programmes is a huge deficit. Where the funds are available, little percentage is targeted at engineering research and innovation in education. Thus the overall expectation of high commitment on the part of teachers to produce sound youth with hand-on-skill as a measure of strengthening them and curbing restiveness is defeated right from school, let alone those of them who seek vocational education outside the formal school system. Similarly, government's creation of difficult environment surrounding the youth, the teacher and the school administrators based on the type of incentives it gives to sooth the choice of planning, recruiting, administrating and funding of education in the country generally gives room for what happens (Kidzu, 2007).

Conclusion

Summarily, this work attempted a philosophical evaluation of strengthening youth capacity and combating youth restiveness through engineering research and innovation in education in the context of Nigeria. During the research period, we examined an existing gap between curbing youth restiveness and strengthening youth capacity. We observed that there are problems militating against strengthening youth capacity and combating youth restiveness through engineering research and innovation in education. In order to breach such gap, only well trained and skillful manpower with sufficient government commitment in policy implementation in education should be encouraged if we must curb future youth restiveness.

References

Asuquo, P. N., Inaja, A. E., David, B. E., & Bassey, P. U. (2005) *Historical Foundation of Education in Nigeria*. Calabar: NIVS Publishers.

Gough, Brian (2017). On Jeff J. Sellingo's "If you want to feel good on a Friday afternoon post". Washinton D. C. @ (jeffselingo.com)

Kidzu, T. O. (2007). "Techer-Curriculum Relationship in Primary School System in Nigeria*:* A Philosophical Appraisal*", Journal of Educational Research and Development.* 2(3): 24-29.

MacDonald, Scott B. (2017). "*Reflections on the Revolution in Europe and America.* The National Interest, October 29.

Mandela, N. R. (1995) *Long Walk to Freedom.* New York: Hachette Book Group.

Mukherjee, S & Ramaswamy, S. (2005). *A History of Political Thought: Plato to Marx.* New Delhi: Prentice Hall of India.

Payton, M. (2017) *"Socrates' View of Technology"* @ (network www.E3Net.org.uk)

Sellingo, Jeff. J. (2017) *A Blueprint for How We Can Beat the Robots.* U.S.A: Happer Collins.

Villers de Wim, (2005). "Mandela's Belief that Education can Change the World is Still a Dream*" The Conversation.* 1.