

RE-DEFINING THE ARTS AND SCIENCES FOR FUNCTIONAL EDUCATION IN THE 21ST CENTURY

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Introduction

The aim of the conference, as stated in the conference poster, is to build bridges across disciplinary, professional and geographical divides reflective of the General Studies Philosophy of providing an intellectual meeting point for all disciplines, expand the intellectual horizon of students and thereby provide broad-based, people-oriented and self-reliant education. The focus is on, but not limited to, the five major disciplines of: Humanities and Social Sciences, Management and Financial Studies, Teaching and Learning, Natural and Health Sciences, and Applied Sciences

Globally, there is growing concern for excellence in higher education. This is particularly so in the developing countries where there is an even greater concern for the perceived fall in the standard of education. There is, therefore, a concerted and deliberate search for measures of improving educational quality and making education more functional in terms of producing graduates who are well grounded and capable of functioning effectively in their own environment and society. Not only graduates, but also people who can contribute their own quota to the growth and development of their country, society or any place they find themselves.

General Studies, as part of the curriculum of most tertiary institutions in Nigeria and Africa, came into being as the originators of this concept and philosophy aimed at eliminating what is generally referred to as compartmentalization of knowledge and harmful academic narrow-mindedness. This is in line with the objectives of the conference of building bridges across disciplines and providing an intellectual meeting point for all disciplines, expanding intellectual horizon of students and providing broad-based, people-oriented and self-reliant education.

Other sub-topics of this Conference include: Security, Peace building, Language, Gender, Communication, Environment, Entrepreneurship, ICT, etc. All these sub topics are in line with the Sustainable Development Goals. In effect, education along these sub-topics would not only help to develop the human person but will help a country engage in healthy competition with other developed countries.

Art and Science

Art is reason applied without limit, geared towards ideal and guided by the practical. The conceptualization and application of an idea or a thing towards any medium of Art demands

both reason and judgment towards appropriateness in the fulfillment of the idea/theme. In Art, reason is used without limit, allowing practitioners to work from the limits set by themselves rather than defined extremely by nature as in science. Art is geared towards the ideal, towards the attainment of perfection. Science, on the other hand, is geared towards the exploration of the practical. Science is reason applied within a frame work, geared towards the practical and guided by an ideal. Both Art and Science do involve the use of reasoning.

Science Education is the field concerned with sharing science, content and process with individuals not traditionally considered part of scientific community. The learners may be children, college students or adult within the general public. The field of Science Education includes work in science content, science process (the scientific method), some social science and some teaching pedagogy. True science is the search for truth.

ARTS	SCIENCES		
	BIOLOGICAL SCIENCES	SOCIAL SCIENCES	PHYSICAL SCIENCES
Law	Medicine	Sociology	Biochemistry
Arts & Design (Visual Arts)	Pharmacy	Anthropology	Chemistry
Painting, Ceramics, Sculpture	Zoology	Psychology	Physics
Theatre Arts	Biology	Philosophy	Industrial Chemistry
Business	Microbiology	Political Science	Polymer
Administration	Food	Government	Computer Science
Public	Microbiology	Economics	Statistics
Administration	Physiology	Geography	Organic, Inorganic
History	Environmen-tal	Social Development	Analytical Fossil fuel, etc.
Archeology	Biology	Social Psychology	
Language & Literature	Plant Anatomy, etc.	Clinical Psychology	
Music, etc.		Industrial Relations, etc.	

Why Functional Education Now?

The reasons why functional education is talked about now by educationalists, educators, policy makers, governments, industries, graduates and students will not be far from the high rate of unemployment – the inability of graduates to possess self-reliance skills which has affected national growth and development and our inability to produce ideal workers. This has led to the importation of people with needed skills to come and work in our industries as well as many Nigerians seeking medical attention outside the country. Again, the lack of confidence in our graduates and high rate of social vices are all responsible for the search of functional education that will meet the needs of individuals and society at large. It is important to state here that Nigeria as a country has had laudable policies but had problems with implementation. For instance, the 6-3-3-4 system of education would have been a good match

if it was well implemented because both middle and high level man power would have been produced by this country and that is the skill needed for today's development. The GREEN Revolution and the OPERATION FEED THE NATION again would have given a boost to agricultural development in Nigeria but they suffered the same thing. It is hoped that now that we have started discussing functional education, we would not allow this to happen again as many countries have survived in this regard and have become world empires as a result of this.

What Functional Education Entails:

1. It must provide for training and retraining of teachers.
2. There has to be a curriculum that meets the needs of the child and society.
3. The content of the curriculum must be adequate, relevant.
4. There has to be provision for adoption and adaptation (local and international contents).
5. It must be able to provide an individual with the cognitive, psychomotor and affective skills.
6. It must specify the teaching method/techniques and principles in order to achieve the stated objectives.
7. The Assessment/Evaluation method must define the criterion reference measure.
8. There has to be a periodic review of the curriculum in line with Global trend.
9. There has to be proper/adequate implementation of curriculum.
10. It should provide for individual differences.

Functional Education: Definitions and Meaning

Functional education is regarded as a life long education. Functional education is an education that can stand the test of time. It is an education that draws its influences from the environment or education that meets the immediate and future needs of a child.

According to Zeilberger (1961) in the United States and in Germany (starting around 1920), the adjective 'functional' refers to education that comes spontaneously from the influence of the environment; it is a kind of undirected, 'natural' education, that is different from the deliberate, goal-oriented education, that is directed by man.

In Western Europe, this term refers to education that comes from the child's needs, and uses the child's interest as a mechanism for activating him and towards his desirable activities; its purpose is to develop the life of the mind, that acts from the wholeness of organic life, with relation to practical life in the present and in the future.

Njoku (1991) defined functional education in the context of Vocational and Technical Education as a life long education, or education that can stand the test of time. It is an education that equips the individual for life and helps the child function in any environment he/she is in. Functional instruction, which arose in the United States and England, takes as its starting point the activity of the child and it is based on a practical work-plan that is intended to have the child master the subject-matter. The subject-matter to be taught is considered according to the importance in the life of the human in his childhood and adulthood. The instruction is based on phases in the life of the student: the country, the environment, the daily life.

It has greatly been observed that the teaching of the Arts and Sciences has not been as prescribed by the curricula of different programmes as to make educational function. This has ranged from the curriculum teaching facilities, methods, techniques and even the qualifications of teachers. Hence, as the 21st century comes with different challenges, the need to have functional education becomes imperative and this calls for the redefining of Arts and Sciences.

A thorough evaluation of the objectives of the Vocational Business Education Curriculum which is described as functional education by Nolan (1976) and Njoku (2006), the objectives of Sustainable Development Goals which just started this year, 2016, and the objectives of this Conference, as well as contributions by other authors, indicate that Functional Education should be able to achieve the following:

1. To empower the individual with desirable skills, knowledge and value to perform specific functions that will help the individual become independent or self-reliant instead of depending on Government or other people for existence, since poverty, hunger and unemployment have devastating effect on any nation. Hence, functional education can break the vicious cycle of poverty, terrorism, dependence, etc.
2. Functional education is expected to help an individual appreciate the world around and contribute maximally to the social and economic development of the nation. In this regard, it would help the individual develop the sense of commitment, respect for dignity of labour, and have decency in work place, as well as help achieve economic growth and sustainable development. Appreciating the world around the individual will lead to peace, justice and strong institutional base. For instance, all over the world today, there is social and economic instability and these have led to different forms of radicalism, distortion of development, lack of innovations, good health, quality education, and progress in all spheres of the economy.
3. To empower the individual in such a way that the individual will develop his intellectual capability that would help him to make informed decisions concerning him and his environment. Looking at what is happening today, we can see that there is doubt in the type of education we receive these days which shows that education obtained has not helped much to build the human person. For instance, there are indiscriminate killing of people, rendering people homeless, sectionalism, rape, lesbianism, homosexuality, prostitution, cultism and other social vices and their attendant consequences. In most of these cases, it was reported that most of the perpetrators were not properly informed; hence, their wrong decision making.
4. To help the individual become a judicious spender and develop proper values for the achievement of healthy living and growth of the nation. Degeneration of values in this regard cuts across different segments of the society and that has led to excessive acquisition of wealth, inefficiency and waste of the nation's resources. Functional education in this regard will help the individual to spend within the limit of his or her income and this would make the individual be free from fraud, corruption and sexual immorality, among others. Today, one can see that the values of hard work, honesty, dignity of labour, self discipline, peace, respect are no longer there.

5. To help an individual to understand the social, political and economic framework of the country, to enable the individual contribute his/her own quota to the country. This suggests that the individual will understand that power is not to amass wealth, engage in bitterness/murder, or make the above injustice become part of an administration. For a person to be free, such a person must have been able to understand the social, political and economic framework of a country in its totality. This will help the individual to adapt positively in any country he finds himself, instead of bringing shame to his country.

This particular aspect, therefore, emphasizes the need for building of bridges across disciplinary, professional and geographical divides and this is where both the five major disciplines and others listed in the Conference flyer have major roles to play in terms of enriching the curriculum of their programmes and going beyond the classroom. This is to say that functional education in the 21st century must cut across all segments of the society if we are to be like the rest of the developed countries.

6. Functional Education must include the social dimension, physical dimension, family-related dimension, financial dimension and spiritual dimensions, as the findings of Njoku (2007) showed that there has to be a way to redeem the young generation. This is because the level of moral decadence all over, especially in the craze for acquisition of material wealth and prostitution in search of white collar jobs, has called for this.

All these, therefore, are geared not only at producing a worker, but a person with functional skills, who will be socially accepted, and physically fit to accommodate any situation, considering the increasing demands of office, family and community in today's society. The spiritual aspect of functional education will help build the moral aspect of our lives since morality has been abandoned at the altar of materialism. We all can see the bombings, kidnapping, killings, raping, and prostitution prevalent in our society.

Hallak (1998), on adapting education systems to deal with the changes of globalization, harped on: Modifying the role of teachers who have the possibility of adapting teaching to individual needs..., review certification procedures, so as to indicate an individual's capacity to adapt to a rapidly changing job market, and rethink the objectives of each level of education. For instance, Cambodia, Malaysia and Indonesia adopted the integrated approach to curriculum development and one of the trends was to adopt a cross-curricula approach. This means that new areas are not integrated as separate subjects but rather appeared throughout the curriculum. In 1998, Mongolia did not only apply the integrated approach but introduced an open window approach too. This was done in order to reflect the rapid changes and emerging issues that were occurring in the society; so that the curriculum will reflect the needs of the society. For example in the health education subject, Mongolia included bad habit, mental health, reproductive health and HIV/AIDS, among others, to ensure that her country enjoys social stability.

7. To develop personal and business attributes that will enable an individual live meaningfully and decently in the society. Any functional education in this 21st century

is expected to arm the students with accounting skills in management and financial studies since entrepreneurship is helping to solve the problem of unemployment. In this case, the individual is equipped with communication skills, including human relations skills, ICT skills, selling skills, environmental skills, language skills, security consciousness, etc., that will enable the business survive. For instance, French and other widely used languages could be injected into the curriculum as is done today at the Secondary School level with the option of Yoruba, Hausa or Igbo languages.

8. Must help provide an individual with factual information that would enable her take an informed decision concerning life. It is true that information does not get to the right people, at the right time and this has hampered the development of most countries, especially as it concerns the health of the people, security and peace as well as gender issues. Today, we are talking about so many social vices while some advance countries have taken care of all these several decades ago. For instance, issues such as gender balancing or gender main streaming are not so critical in a lot of programmes in most of the advanced countries. A critical analysis shows that some programmes in our tertiary institutions have not graduated reasonable number of female or male students since their inception. In the same vein, some institutions have not had reasonable number of male or female HODs or Deans, as the case may be. All these are not healthy for the development of any country which wishes to pursue Sustainable Development Goals, which emphasize the importance of gender equality and the well being of women and girls.

To understand this, Njoku & Yahaya-Makeri (2007) established the level of incidence of gender inequalities in Business Education/Secretarial Administration programmes of Nigerian Tertiary Institutions offering Vocational Business Education Programme. It was reported that more male students from the North studied Business Education/Secretarial Administration than females. The reasons given were: The programme was perceived as female course, that secretaries are prone to sexual harassment hence this was not in tune with their religion as well as their culture. This finding was not far from that of the Report on Consultative Forum on Women Empowerment (2002). This shows lack of proper awareness of the content and objectives of the programme as well as making those in the profession to uphold the objectives of the programme in terms of moral values and teaching the courses in a way that they would bring out the moral aspect of the programme. This calls for mentoring and role modeling. Since the Sustainable Development Goals listed gender equality as one of the goals, women should give that motherly instinct in their teaching if really we are talking about functional education. It is good to let the women understand that girls who had babies while in school as a result of unwanted pregnancies have the right to continue their education with the support of the women.

9. Functional Education Curriculum must provide educational opportunities for individuals preparing for studies to acquire knowledge and skills other than the chosen course of study. Osuala (1989) argued that any education given must afford all students pertinent information to enable them explore and know about the world of work and the relevant interest and career areas of their choice. This has given a clear provision

for the building of bridges across disciplinary, professional and geographical divide as well as building partnership, innovation, and reducing inequality, indicating that no course is the exclusive preserve of any gender or profession. In this regard, individuals are provided with general education and education for business. This will lead to the peace and development of the entire globe.

10. Functional education cannot take place in the first place without a functional curriculum; hence, the curriculum for any education must be functional, relevant and adequate. It suggests that any constraint to the implementation of such curriculum must be taken care of. This means the philosophy and the objectives of education must be well articulated and designed. The objectives of the programme of study must be functional, relevant and adequate. That is, it must be relevant to the needs of the people it is going to serve, adequate in terms of content, in breathe and depth, and such that the individual will be able to use the skills acquired. It is further suggested that the curriculum must be able to accommodate changes at all levels and those who need to benefit from it. For instances, Njoku (2006) listed some of the values that were held sacred in the society but which have been completely thrown overboard resulting to most of the problems we are facing today as:

- i. Values that upholds integrity
- ii. Values of honesty
- iii. Values of hard work
- iv. Values that de-emphasis wealth
- v. Values that do not support getting power and money through crooked means
- vi. Values that encourage one not to be a member of the secret cult but rather members of decent religious social organizations.
- vii. Values that arbor indecent dressing.
- viii. Values that hate cheating and any sort of criminal activities – examination malpractice, rape, prostitution, fraud, etc.; since their consequences have devastating effect on families and nations.

She added that for the individual to imbibe these values, he has to set his own values right. This is where the curriculum for social change has to play a major role, to help the individual make informed decision. Such a curriculum must employ the services of Guidance Counselor, Vocational Counselor, Guidance Psychologist, Sociologist, and other specialists and the giving of different therapies that can be of help.

Whether the values fall into Arts or Sciences they should be integrated into programmes and services, recognizing that infusing them across the curriculum is an invaluable learning tool. In this case, the teacher is encouraging creativity, innovations, critical thinking skills, team work, discipline, etc., throughout the programme.

The Teacher Needed for Functional Education

The teacher to take up the teaching of any course must be worthy in character and learning and must be ready to develop with the changes. It is good to say that the functionality of any

curriculum is largely determined by the objectives of the programme, a well defined curriculum, availability of state-of-the-art equipment/ textbooks and the qualification of the teachers.

Nolan (1967) upheld a view that no one will deny the importance of each of these factors; but the most important one of all, with the possible exception of well-defined objectives, is the teacher. The teacher is often chosen because his philosophy conforms to the aims of the school. He is often in a position to determine the objectives of the programme, or if the objectives are determined by some one other than the teacher, the extent to which the objectives are realized will be determined by the teacher. No curriculum, however well planned; no textbooks, however well written; no equipment, however costly, will compensate for a poor teacher. On the other hand, a good teacher will, to a large extent, offset deficiencies in curriculum, in textbooks, and in equipment.

For functional education to take place in the 21st century, the character of the teacher is the most important of the teacher's personal qualifications, because it would be difficult for any parents to entrust his child to a teacher with doubtful character, as character naturally embraces morals. The teacher of high character will adhere strictly to the ethics of his or her profession as he or she would not take advantage of his or her position to inculcate in the children/ student ideas that are contrary to the moral, religious, economic or political principles that are generally accepted. You can agree with me that these days, some teachers defile, impregnate, extort and rape the children/ student under their care at different levels and these are some of the things causing ills in the society, thereby leading to low pace of development. These, therefore, directs us to what the teacher of the 21st century should be.

Since we are out to redefine the Arts and Sciences for functional education, there is the need to follow certain principles of learning that will apply to the acquisition of cognitive, affective and psycho motive domain.

Functional Curriculum

Globalization is changing education and these changes, according to Pashkevich (2012), are becoming more and more pronounced with each passing year and these changes must be accommodated. She noted that Business and Management education was one of the first areas to react quickly to the new changes.

Ghemawat (2011) said curricular efforts should be the primary area of emphasis for business schools that seek to globalize. Similarly, she opined that if business schools are serious about ensuring that their graduates have the global awareness and competencies to succeed in a global business environment, the necessary place for each school to start is by paying attention to the curriculum. The statements by Ghemawat have great implications in a country like ours where curriculum contents are not quite adequate, relevant or functional to meet the test of time in our country or even other countries, where our citizens may find themselves. This calls for greater enrichment of the curriculum of all programmes as today's businesses demand that global content be included in the curriculum of programmes.

Bremer (2006) emphasized that there is need to put assessment measures in place to understand what works well and does not when preparing students for the global workforce and social lives. Njoku and Nwosu (2014) said that there are greater opportunities in globalization of programme curricula. These include: refocusing the programme by conducting

an intensive study along with global trend, re-strategizing, renaming of courses/departments, and creating greater awareness of what the programme is out to achieve in this era of globalization. To this end, there is need to integrate standard into the curriculum and by doing this, all stakeholders must be involved. Again, there is need to know what we want the global workers to achieve, what competencies we want them to acquire, how the teacher will be prepared and what other learning outcomes needed, by drawing inferences from the society.

That is why the curriculum for Management, for example, is expected to cover Management issues from a global perspective so that graduates of the programme would understand the discipline from a global perspective. It becomes necessary for institutions to move around and know how to add appropriate and relevant globalization-related content in their different curricula.

This, therefore, calls for collaborative cross Boarder Partnership, International Student Recruitment, Teacher Industrial Work Experience Scheme, etc. In this case, this will make them appreciate whatever they are going to receive and adopt the changes, then adapt to it as well as help them become knowledgeable advocates any where they find themselves, leading to socialization.

Japan, in earlier years, understood that they were facing serious challenges in terms of growth and development and decided to learn and adapt immediately in order to survive. From there, Japan started moving gradually and then emerged as world power status in three decades.

The curriculum for functional education in any area must have the content that would bridge the gap between countries as well as understand businesses and their implications. The need for quality assurance in all facets of the teaching/learning process must be assured. This enables the graduates to fit into any area of human endeavour or country they find themselves at all times.

In effect, for a country to achieve total development both in human capital and infrastructural development, there is need for it to jettison a curriculum that is static and adopt a more flexible or pragmatic and functional curriculum so that changes can be accommodated at all levels and those who need to benefit from it will do so. Nigeria has come to a stage where differentiated curriculum should be used if we are to have positive social change in the country and for us to achieve functional education.

In a country like ours, where less than half of the youth are employed and social ills have eroded our value system to a large extent, there is, therefore, the need for us to look for new ways to integrate emerging issues into each programme and this is through the curriculum.

Adoption and Adaptability

Hallak in his conferences (January 1998 & March 1998) pointed out that to meet the challenges of globalization, it would in fact appear necessary to prepare individuals for a workplace where responsibilities are constantly changing, where vertical management is replaced by networking, where information passes through multiple and informal channels, where initiative-taking is more important than obedience and where strategies are especially complex because of the expansion of markets beyond national borders. He added that education must help individuals to perform tasks for which they were not originally trained, to prepare for a non-linear career path, to improve their team skills, to use information independently, to

develop their capacity for improvisation as well as their creativity, and finally, to lay the basis of complex thinking linked to harsh realities of practical life.

Linking the above with the current happenings, it becomes necessary for educators to embrace globalization by adopting what prevails in advanced countries and injecting them into our existing curriculum. This will be in form of the content, relevance, functionality and integration. Unfortunately, Pahkaj (2012) believed that business schools around the world still strive to figure out how to add appropriate globalization-related content to their curricular. Furthermore, areas like teaching methodology, techniques, use of information technologies, certification, needs of the society, and that of individuals must be greatly considered. Furthermore, he observed that schools have incorporated a substantial level of global content into their programmes but with insufficient attention to ensuring that the right content is incorporated.

In adopting curriculum content, there is need to take into cognizance the social effect, knowledge barrow, and structural barriers, among others. The idea here is to fashion out ways to apply what exist in other countries in our own country by using the approach that would accommodate such and inject global content that would not dislocate the objectives.

This suggests that adoption must be followed by adaptation that would help in service/teaching delivery, acceptance of the curriculum, training teachers, availability of all the resources needed and free implementation without hindrance. The relevance of adoption and adaptation is evident where Lehmann (2008) stressed that the business executive of the 21st century must be well equipped with four attributes: Business acumen, global knowledge, an ethical compass and committed citizenship. He concluded by saying that all these require sound education, not just knowledge but also wisdom. Knowledge is what will make a worker become global.

What should be included, as regards globalization, must be in line with the objectives, global trend, and be adapted to suit global work force. This will include cross country differences, opportunities, values and skills needed for global competitiveness. Similarly, Nwazor (1999) did not differ from Njoku (1999) and decried the inadequacy and irrelevance of the curriculum by identifying gaps in career.

The Role of the Teacher

In re-defining the Art and Sciences for functional education, there is need, as stated by Hallak (1998), to modify the role of teachers who have the possibility of adapting teaching to individual needs, review certification procedures, so as to adapt to a rapidly changing job market, and rethink the objectives of each level of education.

Furthermore, Njoku (2009) said that there are critical challenges of the 21st century that must be handled by the teacher if the teacher is to provide functional education to the students. These include economic/domestic challenges and spiritual challenges. For the resultant technology/educational and environmental/societal challenges, Njoku, therefore, gave the role of the teacher as:

1. A Trainer (Academic)

Not only to teach but to train the pupils/students in reading skills, communication skills, listening, speaking, problem solving, interpersonal/human relations (To encourage team work and respect for life).

- i. Takes into consideration individual differences by applying different methods of teaching and learning styles.
- ii. Provides teaching aid at all cost to ensure that teaching is effectively done since teaching facilities are not adequate these days. This is to say, s/he has to be a power broker.
- iii. Follow the prescribed curriculum with professional touch and inject local content when necessary.
- iv. Inculcate the value of hard work in students.
- v. Become skilled in the use of modern equipment.
- vi. Integrate informal education into formal values, ethics, culture, and tradition for the total development of the child/ student (a symbol of cultural identity).

2. Counsellor (Vocational, Spiritual, Economic and Social)

- i. Helps counsel students about their vocation in order for them to make right choices.
- ii. Offers students spiritual counselling during teaching or outside the classroom. This is because their Christian virtues have been eroded, and some of them have been morally jettisoned, their womanhood debased because of what they come in contact with in the society.
- iii. Inculcates in the students that economic wealth is not the sole aim of life, as some of them have resorted to robbery, internet fraud, kidnapping, abortion and prostitution in order to be in line with the demands of the 21st century (ostentatious living).
- iv. Encourage/motivate the dull students and sacrifice to help out.
- v. Empower students with sex education, concept of love and infatuation and other helpful issues as well as offer therapeutic counselling.

3. Surrogate Parent (Friend, Human Relations Specialist, Psychologist, etc.)

- i. Carefully study students with problems in the class, and the reasons for any abnormal behaviour manifestation in the class and help them out.
- ii. Act as surrogate parent to the students especially those from broken home.
- iii. Neutralize all negative stories surrounding an adopted child, physically challenged child, or a child that suffered humiliation. If not helped out, they will drop out of the school.
- iv. Teach from the psychological base, add humour in dealing with the students, display the dignity of the teaching profession and critically think along with difficult students.

4. Leader

- i. Assume the position of a role model and mentor.
- ii. Build in students self confidence and leadership qualities through assignments, team work, debate, delegation, discussion and challenging issues.
- iii. Help them harness their potentials that will help them bring about positive change in development and peace in the society.
- iv. Respect the views of the students so as to ginger them and make them become creative thinkers.
- v. Promoter of Gender Equality and Mainstreaming

- vi. Advocate gender equality and mainstreaming in all courses/programmes in the institution.
- vii. Eliminate in the process of teaching those courses that will serve as impediment.
- viii. Advocate the writing of textbooks that are not gender biased so that the contents would help send down the message that no course or area of study is exclusively preserved for any sex.

The study further recommended that teachers, parents, students and governments have their roles to play.

Teaching Methods and Strategies

The teacher has to bear in mind that when new materials are introduced students are not likely to accept them with ease hence the need to understand the following:

- i. Law of learning
- ii. Principles by which people learn
- iii. Principles related to skill building
- iv. Strategies for teaching
- v. Three of Thorndike's law of learning: Readiness, Exercise of practices, Law of effect

Method of Teaching

No one method is effective for all learners; students learn better when they are involved in multiple learning activities:

- 1. Demonstration
- 2. Use of brochure
- 3. Use of audio visuals – teacher’s demonstration, role playing, field trip, motion picture and television
- 4. Visual aids – textbooks, chalks/ markers, board, bulleting, mounted pictures, graphic materials
- 5. Audio aids – record player, radio, cassette recorder
- 6. Discussion of real life cases and problems will make them see the topic’s relevance to everyday activities and this helps to catch their interest.
- 7. Individualized instruction
- 8. Questionnaires
- 9. Role playing
- 10. Guest Speakers
- 11. Brain storming
- 12. Group study/project work

Learning Styles

The teacher has to understand that the students should adapt to other learning styles so as to accept the curriculum. Similarly, there is need for the teacher to understand that each individual is unique hence has different learning styles. The teacher has to adopt different learning styles so as to accommodate every student. For instance, we have the following in any teaching-learning situation: activists, reflectors, theorists, pragmatists

1. **Activists:** Learn best from new experience/problems, survive in teamwork that is highly competitive, enjoy being leaders and believe in tackling problems by brainstorming.
2. **Reflectors:** Like to keep quiet in group discussions, work from the past or from experience or from their move forward. They do not panic and they take a lot of information from others. They revisit issues over and over again before taking decisions. In effect they plan and organize whatever they are doing.
3. **Theorists:** Believe strongly a good reason must be given before they accept a thing, must see things in their logical sequence.
4. **Pragmatists:** They do not believe in wrangling, develop new ideas and get things done. Things must be done without waste of time, keep on moving.

No matter the teaching method used by the teacher and the learning style identified, motivation is very important. In this case, there has to be appropriate humor, good time management, good preparation by the teacher, reward, appropriate use of technical languages, praises, use of participatory approach, etc.

When students are properly motivated towards the curriculum, they have feelings of

- i. accomplishment
- ii. recognition
- iii. responsibility
- iv. personal growth
- v. satisfaction from the act of learning

Recommendations and Strategies

From the foregoing, the following are recommended ways for redefining the Arts and Sciences for Functional Education in the 21st Century.

1. Women should be in the vanguard of gender equality, mainstreaming, gender-explicit and implicit issues, to drive home the Sustainable Development Goals by 2030. They help do this through value reorientation, awareness, data collection on the above and ensure that equality dimensions be integrated into all policy development, implementation and evaluation process. A functional educational programme must adopt a gender mainstreaming approach.
2. There has to be a functional curriculum that is rich in depth and breath as well as relevant, adequate and functional. The curriculum must be drawn by different stakeholders who must be willing to sacrifice and collect data from society in terms of needs, interest and what is required by the country and other developed countries.
3. Functional education is not only the acquisition of cognitive and psychomotor skills. The affective skills (values) are lacking in our society today and that is why we talk about corruption at different levels. This is to say that experts from different programmes must sit down and articulate how to integrate certain values that are lacking in individuals or graduates into the existing curriculum/curricula. For instance, the security, peace building, conflict resolution, ICT (we can see that the negative side is almost taking over the good that has been brought to us, here), entrepreneurship, etc.

4. Teachers should uphold the ethics of their profession. The idea of sorting, checking scores, impregnating a student or assaulting students is unprofessional. We hear teachers, even at the primary school, impregnate their pupils, yet the teachers remain in school and continue secretly with their act. Yet the teaching profession remains indifferent. No medical doctor or lawyer toys with their profession and gets away with it. Teachers should live up to their expectations by holding unto the ethics of the teaching profession with pride. To this end, they should set up a body that has integrity to handle any unethical behaviour that would not lead to functional education.
5. Any functional education given to a child is expected to build self confidence in the child – emotional, spiritual, social, physical, moral, psychological and economic stability. This is necessary because of the challenges facing the society. Njoku (2008) believes that lack of confidence has a close relationship with low aspiration. This may be one of the reasons why more women remain at the bottom or play a second fiddle instead of aspiring to the top echelon or some girls falling prey where they should not. Teachers should inject all this as they teach if they are not covered in the curriculum and do this also through mentoring or acting as role models.
6. Curriculum for functional education must take into consideration individual differences. No two people are the same. In advanced countries provisions are made for both the slow and fast learners. It follows that different teaching strategies, methods/techniques must be used to accommodate these. This is where the teacher is expected to display the skill of psychologist and vocational counsellor/guidance.
7. Functional education requires functional and adequate equipment as well as modern equipment for practical demonstrations. Teaching of practical courses in theoretical form will hinder functional education. There is need to provide up-to-date and adequate equipment/teaching facilities. Here the teacher is expected to follow the principles of teaching skills using demonstration by student, re-demonstration, and evaluation. In effect the teacher must have a thorough knowledge and understanding of such equipment. This is why teachers in a department should always organize in-house seminars or go for retraining from time to time.
8. Funding of education has been grossly inadequate. Unfortunately, in Nigeria, governments of different levels are mostly responsible for the funding of education. This is not the case with advanced countries where philanthropists, organizations, and agencies take education as a project to ensure that goals of education are met. Governments should step up its finding while school authorities, education planners and other stakeholders can consider the comparative advantage.
9. Teachers should engage in multiple learning activities, such as role play, field trip, motion pictures, brain storming, team work/ group, leading to cooperation, acceptance of decision and development of human relation, skills. Discussion of real life cases and

problems will help students see the relevance of everyday activities and studies. This will help to catch their interest and they will become creative thinkers.

10. Since lack of information and awareness has been lacking in our setting, especially as it concerns health, peace, etc., it becomes imperative to include in the curriculum for each programme health-related cases, such as mental health, reproductive health, HIV/AIDS or STDs, Cesarean Section, courtship (love and infatuation), citizenship, etc. All these would help to build the human person who is able to make informed decisions concerning his life and lives of others.
11. Functional education can be achieved and sustained if the curriculum is designed in such a way that the individual would be able to appreciate the world around him, i.e. appreciate natural resources (land, water, forests and plants) so as to sustain them. For instance, in those days the teachers of nature study take the pupils outside to show them flowers, leaves and their medicine values. These were highly appreciated and most people developed the spirit of entrepreneurship through the production of herbal medicines which are approved by NAFDAC. In this regard, teachers would let the students know why we should preserve our ecosystem.
12. The Political Science is changing and education has to assume new dimensions to accommodate this. Injecting those elements that are causing doubt or heating up the system in the curriculum will automatically change the future political lives of the people.

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