Teachers' Involvement, Commitment and Innovativeness in Curriculum Development and Implementation

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The study was designed to investigate Nigerian science teachers' involvement, commitment and innovativeness in curriculum development, implementation and change. Resistance to change and reluctance to implement national curriculum have been identified as one of the reasons for falling standard in education. The author sought to find out if Nigerian teachers were always being carried along in the development and implementation of national curriculum. The sample consisted of 630 secondary school teachers drawn from the six southwestern states of Nigeria. Questionnaire tagged Teachers' Involvement, Commitment and Innovativeness (TICIQ) was used for data collection. The data collected was analyzed using frequency counts and percentage. The findings are: Teachers are often drafted to classroom implementation of curriculum reforms but are seldom involved in the development and how best to implement such reforms; The teachers are yet to embrace modern methods, approaches and techniques which include the use of computer interactivity and internet resources in classroom science teaching; While majority of them are proud to be teachers and may not opt out if given a second chance yet they frown at any attempt to lay them off on account of not being computer literate and internet compliant. The author concluded that teachers often show resistance and lack of commitment to implementation of curriculum reforms because they are seldom involved in the development and even how best to implement them. The author equally recommended the adoption of grass root approach to curriculum development involving all stakeholders including teachers who would implement the curriculum in the long run.

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INTRODUCTION

The teacher has become the focus of attention in modern world because of his unique roles in the society. It is daily becoming increasingly clear that no nation can rise or develop without the right caliber of teachers (FGN, 2004). Teachers are nation builders (Okeke, 2004) since majority of the members of a particular society will pass through their moulding hands. It can therefore be said that whatever levels of development a particular nation passes through will partly be a true reflection of the caliber of the teachers. No wonder then that both developing and developed nations of the world are constantly engaged in research to the ways of producing the right quantity of the right quality of teachers who will be able to uphold the ethics of the profession.

In the early and primitive society, education focused on children learning the mores and practical skills of their tribes by imitating the elders. The curriculum was life experiences and the future of the society depended on carrying on the traditions that were successfully transmitted to the children. There were no schools, no teachers, everyone in the village was a 'teacher' (Duyilemi, 2002) and the children learn by doing and imitation (Fafunwa, 1976). As civilizations developed and the knowledge skills based of a society become more complex, education became more important. The apprenticeship system as a means of staffing trades and preparing future craftsmen was thought of and used. By the time many more parents wanted their children to have knowledge and skills beyond that of peasants, servants and the common people, teachers' training institutions and professionalism in teaching began to emerge. Today, teachers gained more prominence not only in teaching but in the development of learning materials for students (Curzon, 1985). In the past they used to be committed to the work. They were standard bearers in the communities. Some questions one may ask now are. Are teachers still the standard bearers? Are they willing to take up the challenges of participating in production of learning materials and implementing new reforms? Do they embrace new innovations? How committed and innovative are the present crop of teachers? These are questions that need be answered as the societies are desiring to have the best education can afford for the students.

Curriculum Development, Implementation and Change

Curriculum development has been described as a stepwise process or procedure of developing a programme of studies, projects or course offerings for a group of people (learners in conventional schools and informal settings, artisans, prison inmates) (Onwuka, 1996, Oloruntegbe, 2003 and Oloruntegbe and Daramola, 2007). Although the structure of curriculum development has come to be fairly

constant in the sense of being built on Tyler's (1949) and Taba's (1962) prescriptive models of goals and objectives, content or subject matter, method and evaluation, it has in the course of history being a 'filling-up' process (Onwuka, 1996). The four components listed were not arrived at at once. Even after these four curriculum theorists have had cause to add more.

Consequently, starting from Franklin Bobbit's two steps (Bobbit, 1918) through Ralp Tyler's four steps (Tyler, 1963), Hilda Taba's seven steps (Taba, 1962) to Nicholls and Nicholls' five steps (Nicholls & Nicholls, 1972) and others, the filling-up process continue as outlined in Fig 1.

Bobbits	*Tyler*	*Taba*	*Nichols & Nicholls*
Content	Objectives	Diagnosis	Situation analysis
Method	Content	Formulation of objectives	Objectives
	Method	Selection of content	Selection of content
	Evaluation	Organization of content	Suitable methods
		Selection of experience	Evaluation
		Organization of experience	
		Evaluation	

Fig 1. Filling-up Process of Curriculum Development

The curricula and projects developed world wide have followed the prescribed four steps. The goal of these curriculum processes in countries is to develop curricula that will compare favorably with those of other leading countries. The issues of adequate implementation of a well-planned curriculum are crucial. There is always the gap between the curriculum that is developed and its implementation.
For this, Bartlett (1990a) claimed that the term curriculum is so diffused in usage such that various connotations exist. Like we used to hear of formal curriculum, implemented curriculum, perceived curriculum, operational curriculum, experiential curriculum and learned curriculum (Gauteng Department of Education, 1996). The patterns and discrepancies among this different type, especially, that between the intended curriculum and implemented curriculum calls for deep reflection.

Not all curricula will be properly implemented for reasons of inappropriate funding as witnessed in Sub-Saharan Africa (World Bank Report, 2007), centralization and over-centralization of curriculum development efforts (Yigzaw, 1981) and other factors. Beside this, and as submitted by Carless (1997) "Educational innovations have rarely lived up to the expectations of their proponents". The need to revise and update existing educational curricula in response to profound and multifaceted changes occurring in the world today is widely recognized. So change is inevitable, it is a part of life.

The Roles of Teachers in Curriculum Development, Implementation and Change
The responsibility of the teachers is now more extensive than in the past. They are given a major

role in contributing to a whole array of economic, social and cultural issues which often have root causes well beyond school's ambit (Gauteng Department of Education, 1996).Their roles have been situated along major development indices that resonate between classrooms and the larger community. These roles have been described variously by scholars as 'critical connections" and "extended professional" (Bartlett, 1990a), "principal role-players" (Carl, 2002), "sole implementor" (Yigzaw, 1982) researchers, trainers and curriculum workers (Saban, 1995; Young, 1988). Pai Obayan's model, however, is instructive in revealing which way and how the teacher can be involved in program development. The model also itemizes other inputs, processes and outputs variables of program development and all that would make the implementation successful.

Researches have, however, revealed the neglect or non-involvement of teachers in curricula innovations. Carl (2002) and Gauteng Department of Education (1996) affirmed that the "voice" of the teacher is to a large extent ignored or not heard. Yigzaw's (1982) study indicated that eight five percents of the 110 subjects stated that they had not been involved in the development of curricula. That even at implementation sixty three percents reported that the most serious problem in this area was that materials were usually not sent on time or that they were not informed of the innovations before hand. While teachers were recognized as sole implementers of curricula change, many times they received little or no orientation on innovations. One can see why teachers resisted or were reluctant or were slow to implement innovations. Thaman (1988) and Schnidt & Pramwat, (2006) share the view.

Most curricula innovations in Africa and a few other parts of the world were initiated "top-down" (Ramparsad, 2001; Beswick, 2009), through "power coercive" or "unilateral administrative decisions" (http://www.universitip.com/term-paper) and externally imposed (Zhao et al, 2002), in utter negligence of the much powerfully-embraced "grassroots" (Beggs, 2004; Rogers, 1995), or the "normative re-educative", rational-empirical" or "bottom-up approach" as suggested by Beswick. This further informs the reasons for teachers' reluctance. Innovations must be locally-driven and collaborative (Nomdo, 1995, Saban, 1995) to make it widely acceptable. Collaborative efforts involving teachers were observed in the National Curriculum Project (NCP) in Australia. (Nunan, 1989) and Curriculum 2005 of Gauteng Department of Education in South Af (Gauteng Department of Education, 1996). The NCP frameworks are "intended as teacher-development tools as much as curriculum planning tools" and the project a form of "curriculum consciousness-raising for teachers" (Bartlett, 1990a).

Table 1: The Essential Elements of Quality in Education

Inputs	Processes	Outputs
1 Society	1.1 Popular involvement in implementation-all facets 1.2 Societal acceptance of the programme	*Successful learning* Acquisition of socially desirable intellectual and non-intellectual skills Continuing interest in learning
2 Policy	2.1 Adaptation to local conditions 2.1 Democratic policy review practices	*A full-fledged societal support* Permanent, unqualified society's interest in promotion of education
3 Management Framework	3.1 Decentralization/devolution of power down to grassroots levels 3.2 Empowerment and autonomy for operators all down the line	*A well-motivated teaching and educational management force*
4 Curriculum	4..1 Responsive to societal and individual needs 4.2 Comprehensiveness: courage of the **three h's** (the head, the hands, and the heart) 4.3 Adaptable to changing time, needs and conditions	Teachers fully devoted to continuous self-improvement for concerted promotion of education
5 Teaching Force	5.1 Qualitatively adequate 5.2 Adequately educated and professionally prepared 5.3 Adequately able to promote teacher-pupil interaction to maximize learning (pedagogy) 5.4 Well-motivated through appropriate welfare package, professional support, and opportunity for self-development	*A self-regenerating educational system for self-regenerating society* The ultimate goal, a committed society, a critical mass of productive/creative citizens, an education system that goes on improving
6 Infrastructture	6.1 Qualitative, aesthetically and spaciously adequate 6.2 Learner and teacher friendly 6.3 Integrated pedagogical space of classroom-laboratories-libraries-workshop-recreational	
7 Materials	7.1 Quantitatively adequate 7.2 User friendly, easily exploitable and challenging to both teachers and learners 7.3 A judiciously mix of print-audio-aural and other materials 7.4 Closely related to the goals of curriculum	
8 Funds	8.1 Quantum (adequacy) of funding 8.2 Targeting funds to those things that will really make a difference 8.3 Prompt release of funds 8.4 Prudent application of funds	

Source: Obanya (2002) Revitalizing Education in Africa

These ideas are summed up in Sttenhouse's (1980) writing as "No curriculum development without teacher development" and that "Curriculum development is about teacher development". In the case of Curriculum 2005, there was a development programme for "Foundation Phase Teachers" (Ramparsad, 2001). This was done to enhance teachers' involvement in the design, dissemination and evaluation phases, which according to Ramparsad was initially not emphasized. Curriculum 2005 takes into consideration the Vally & Spreen's (1998) view that "concerns over the new educational policy are not just about curriculum change, but also about institutional change". Kennedy & Kennedy (1996) submits that change is complex and that part of the complexity is teachers' attitudes in the implementation of change. Cohen & Hills, (2001) and Kubitskey & Fishman, (2006) equally maintain that the sustainability of reform initiatives relies on teachers maintaining alignment with the intent of the initiative. Curriculum implementation can only be successful if teachers and communities are involved in the development and implementation of curriculum and structural changes. In spite of the trump-case clamor for teachers' involvement, many teachers are unsure of the roles they should play in curriculum development

(Saban, 1995). Many, especially the older teachers are comfortable with "routines". They teach the same topics the same way using the same materials year in year out (getting the same result anyway), even when there is a new curriculum mandate. Cohen & Hills (2001) again noted that "Expecting teachers to embrace new instructional approaches without sufficient training and information on why such change are necessary, or warranted, often result in inadequate adoption of the curriculum mandate". Other scholars like Yigzaw (1981) and Vally & Spreen (1998) suggested massive training to redress the lack of teachers' involvement in curriculum development and reduce their anxiety during the introduction of new curriculum

What is the status of teachers' involvement and participation in curriculum development in Nigeria? What development approaches are employed in the design of its (Nigeria) curriculum, is it top-down, bottom-up, or collaborative approach? What is the disposition of teachers towards the introduction of new curriculum is it with embrace or reluctance? What training programs are put in place to update the teachers? How prepared are the teachers for training? These are some of the questions that this study sought to address.

The curricula operated in Nigerian primary and post primary educational systems are a popular one developed centrally by the Nigerian Educational Research and Development Council (NERDC). They were purchased by the federal and state Ministries of Education and distributed to schools. If the teachers

in Unity Schools owned by the Federal Government were involved in the development and implementation training the same cannot be said of the state secondary schools which are far greater in number and higher students' enrolment. One official of the council (NERDC) at what could be called a sensitization session at the 2008 49th Annual Conference of the Science Teachers Association of Nigeria (STAN) in Yenegoa, Bayelsa State accused the science teachers of tucking in the national curricula in their tables' drawers and opting for the examination syllabi. Nobody knows how far the sensitization has gone and how much it has achieved but the result of this study confirmed Nigerian teachers several and mixed usage of the national curriculum and the syllabi of the various examination bodies in the country. Beside NERDC, there are other agencies such as Nigerian Union of Teachers, All Nigerian Conference of Principals of Secondary Schools (ANCOPSS), Nigerian Teachers Registration Council (TRCN), Millennium Development Goal Project (MDG Project) in collaboration with State Ministries of Education and National Teachers Institute (NTI), subject associations like the Science Teachers Association of Nigeria (STAN), Mathematics Association of Nigeria (MAN), Social Science Association of Nigeria (SOSAN) and others that have variously engaged in curriculum development, implementation and change with teachers' development as a central focus. For instance, the ANCOPSS has its own amorphous and simplified version of the national curricula circulated to schools. Whatever the goal of such effort is, the fact remains that only the principals of schools have input in it. It is still top-down approach in a little way because even the Vice-Principals do not attend its meeting and conference not to talk of the bulk of classroom teachers who implement the version.

Another likely reason for improper implementation is the teachers' use of out-dated methodology and strategies of lesson delivery. The Teachers' Registration Council of Nigeria (TRCN) that licenses teachers set transition periods for computer literacy and internet compliant as criteria for licensing. The various periods have since expired yet a large number of the teachers are not computer literate. So far, the training of teachers in this respect has been shoddy for low attendance and lack of computer and internet facilities in schools. The teachers themselves do not see this development as being important. The World Bank put Nigerian computer literacy and internet compliant figure at 1.7 in 1000 (World Bank Report, 2007). This translates to 22500 of the 150million Nigerian population. Teachers in private primary schools alone are more than 22500 not to talk of the public primary, private and public secondary and tertiary teachers.

Inadequate funding is one general problem with curriculum development and implementation in the region. The World Bank Report put government expenditure on education at 6.7% of Gross National Income (GNI) in 2007 and 7.2 in 2009 as against the UNESCO directive of 26%. The situation is about the same in almost all Sub-Sahara African nations. The implication of the shortfall is that teachers of whatever categories are poorly represented in development and planning, poorly trained and poorly remunerated. Many of them do not belong to subject associations like the Science Teachers Association of Nigeria that organizes annual conferences and workshops for teachers' training and development. As a result they do not attend training programs especially when the meager sponsorship is not forthcoming. How committed and innovative would such teachers be? This and other questions earlier raised bothering on their involvement make the focus of this study. The purpose of the study is to find out if Nigerian teachers were always being carried along in the development and implementation of national curriculum.

METHODOLOGY
Six hundred and thirty secondary school teachers drawn randomly from six Southwestern states of Nigeria constitute the sample. They were made to respond to self constructed validated questionnaire tagged Teachers' Involvement, Commitment and Innovativeness (TICIQ). The questionnaire sought to find out teachers' involvement in curriculum development and implementation, their innovativeness and readiness for self-development and other variables. It was validated using a team of curriculum scholars (colleagues among university academic staff) and test retest determination of reliability coefficient with teachers outside the sample, with $r = 0.78$. The data collected was analyzed using frequency counts and percentage.

RESULT AND DISCUSSION
The results of the study are presented in tables as shown below.

Table 1. Teachers' involvement

Items	Yes	No
Should teachers be involved in curriculum development?	95.7%	4.2%
Have you ever been involved in curriculum development?	38.4%	61.5%
	Seminars	*W/shop*
	10.4%	*1-9%*
Conferences		
In what ways have you been involved?		
0.6%		

The bulk of the respondents (95%) agreed that teachers should be involved in curriculum development, but only very few (38%) claimed that they were ever involved. This few were involved through seminars meant to introduce the curriculum to them

Table 2. Teachers' Commitment to National Curriculum Implementation

Types of curriculum /syllabus implemented	Nerdc	Waec	Neco	Nabteb	Ancopss	Others
% of Teachers	22.3	37.8	15.3	3.3	21.1	6.2
Items					Yes	No
Can the curriculum implemented get the nation anywhere?					69.5	30.4
Should teachers cover all topics in the curriculum/syllabi?					74.9	25.1
Would the coverage of the curriculum lead to better performance?					80.0	20.0

The result above shows that the teachers did not adhere to the implementation of national curriculum. Only 22.3% did. The national curriculum as stated earlier is the one developed by Nigerian Educational Research and Development Council (NERDC). Majority implemented the versions prepared as syllabuses by examination bodies like West African Examination Council (WAEC), National Examination Council (NECO) and National Board for Technical Education (NABTEB). A large number of the teachers (21.1%) used the NERDC version modified by All Nigerian Conference of Principals of Secondary Schools (ANCOPSS).

Although all these versions may look the same in a way, but with the distinction outlined between curriculum and syllabus by Curzon (1985) the few teachers who implemented the curriculum might be said to be transmitting knowledge content directly. While the others tend to follow the traditional textbook approach of an 'order of contents', or a pattern prescribed by a 'logical' approach to the subject which generally may not indicate the relative importance of the topics or the order in which they are to be studied

This means there was no commitment to the implementation of the national curriculum. It is not out of place to say that teachers tucked the national curriculum inside their tables while they implemented the examination syllabuses. As indicated in the table, there is also the tendency to cover all the topics of the curriculum/syllabi even when the action would not lead to students' better performance. This went in support of teachers "teaching to test" revealed by World Bank Report (2007) as against 'less is more' advocated by (Fratt, 2002; College of Science, Purdu University, Latayette, USA, 2005 (http://www.science.purdue.edu/core/requirement2.asp) That the number of teachers who claimed that the curriculum they implemented can not get the nation anywhere was that large (30.4%) means that they were not convinced of the change inherent in the implemented curriculum. It is either the teachers were reluctant to implement the change as noted by Kennedy & Kennedy (1996), they were unsure and

uninformed (Saban, 1995, Thaman, 1988, and Nisbet, 1980, or they were in a way calling for change in the existing curriculum. Whatever may have accounted for this, the fact remains that majority of the teachers did not implement the national curriculum. This may work against the national objectives (FGN, 2004) which depend on education for achievement.

Table 3. Teachers' innovativeness

Items	Yes	No
Teachers who are not computer literate can not be effective	53.7%	46.3%
	23.2%	76.8%
Those not literate to be sent away at the end transition period	**Scattered**	**Grouping**
	7.0%	21.7%
Students seating facing the board	**Yes**	**No**
	75.5%	2.6%
What is your idea of good classroom organization? 71.3%	17.8%	31.7%
Not Sure Would students learn better working in group? 21.9% Students working individually is better 40.5%		

Majority of the respondents (53-7%) are of the opinion that teachers who are not computer literate can not be effective. This number seems too small when we consider the fact that it is mandatory for all teachers to be computer literate and internet compliant to be effective in lesson delivery at this dispensation. That many (76.8%) are willing to stay on job without computer literacy in spite of the transition set by the Teachers Registration Council of Nigeria (TRCN) and the opportunity made available by the government means that the teachers are unwilling to improve themselves. It seems that the teachers, as observed in Kimpston & Anderson's (1986) study, are not willing to change even when they know what best is good for their students and their profession.

CONCLUSIONS AND RECOMMENDATIONS
The author concludes that Nigerian teachers were seldom involved in the process of curriculum development. The review of literature also indicated the same in some other countries. This may have accounted for the reluctance in implementing the national curriculum. Curriculum reforms in this part of the world has for a long time been subject-specific and examination-driven. Preparing students for examination and teaching to test seem to gain more attention than implementing the all-inclusive curriculum meant for the overall development of the child. It was noted that the capacity-building in-service programs organized by teachers associations like the Science Teachers Association of Nigeria draw more participants from outside the classroom. This is so because attendance at seminars, workshops and conferences often attract sponsorship. The tendency to sidetrack the teachers who needed the training more than the Ministry officials is often there. That teachers' promotion is not tied to self and

personal development hinders innovativeness and productivity. A large number of the teachers are not computer literate and internet compliant. That the interest is not even there is evident in the results of the study. This is a kind of pedagogical impediment because effective teachers draw on the most advanced technology and communication tools to help enhance students' learning. If teachers feel unconcerned in this era of knowledge-driven and information society then the goal of providing quality education for the child will be a mirage.

The author recommends that teachers should be informed, trained and involved in the process of curriculum development. Most reforms should be initiated from the grassroots, bottom-up, particularly by teachers who are on the field and know what and where a change is needed. Curriculum emerging through this process will be more acceptable. The question of teachers' reluctance in implementation will not arise. Appropriate structure must be put in place for teachers' development so as to enhance their productivity and make them accountable for quality education.

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