

Evaluation of Innovation and Sustainable Development in Secondary School Education: Osun State Experience.

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Abstract. There is no doubting the fact that, the state of education in Osun before the advent of Aregbesola's administration in late 2011 was not satisfying. The sector witnessed poor teacher morale, poor school infrastructures, ineffective school administration and poor learning outcomes. The situation can only be remediated by a critical non-conformist surgical approach to change. An irredentist change and innovation agent can only be the one to confront the herculean task. The government convoked an education summit to proffer solutions to the education problems facing the State. The summit recommended complete overhaul of the Osun education programme never seen in the annals of the nation's education reforms. Particularly, the summit recommended a complete revamp of school infrastructures, a radical approach to education administration by decentralizing education management boards along senatorial zones and a reclassification of schools along age grades such that students of the same age grade could be found in same school environment. The result was a systemic change in the structure and face of Osun education with increased enrolment into schools at all levels coupled with improved performance of students of the State in West African School Certificate Examinations. Also there was an unprecedented improvement in school attendance, school retention and teachers' morale. However, the programme had its own challenges both at the teething stage of the programmes and at its implementation. Dwindling government revenue resulting from economic recession made it difficult for

government to pay recurrent expenditures which kept on increasing while capital expenditures suffers set back. This was worsened by the collapse in value of the Naira, forcing contract sums to be reviewed upward and changing revenue and expenditure projections. The paper concluded by recommending the Osun experiment to other States of the Federation. The various reforms and innovations should be sustained and immune from politicization irrespective of the government in power.

Keywords: Innovation, Opon Imo, O'Meals. O'Shools O'Uniform

1. Introduction

Innovation means something new, learn from others, adapt and enhance ideas, plan and run ideas. It is the process of making changes to something new. It applies to radical incremental changes to products, process or services. Being innovative is about looking beyond what we currently do well, identifying the great ideas of tomorrow and putting them into practice. Innovation here is for educators who are trying new ways of doing things in their learning environment. Over the years there have been many changes in the way education is designed and delivered in parts of the world. Today, technology is a big driver behind change and sometimes plays an important role in innovation in educational design and delivery.

Job creation and income generation are vital economic growth in developing countries. This in turn depends on the availability of an appropriately educated and properly skilled workforce with knowledge, skills and competencies necessary for work in the globalized economy. However, both limited enrolment and poor quality of secondary education in developing countries mean that youth do not acquire the skills needed for employment and income generation. The movement towards knowledge industries makes the completion of at least quality, relevant secondary school particularly critical.

2. Research Objectives

The study aimed at identifying those factors that drives innovative practices of the state government as well as evaluating the effects of the reforms on the education sector in the State. Specifically, the study aims at:

- (i) Identifying the motivating factors that drives the states' massive reform and innovation in education
- (ii) Measuring the effects of the innovation on enrolment progression in the states' primary and secondary schools.
- (iii) Measuring the states performance in public external examinations especially the one conducted by the West African Examination Council.
- (iv) Identifying the influence the reforms had on the other sectors of the states' economy, especially on women empowerment, food production employment generation and growth of small and medium entrepreneurs.

3. Methodology

The study used descriptive research method of survey design. A researcher-designed checklist was used to collect information on school enrolment in the pre and during innovation. Information on distribution of government uniforms, computer tablets and construction of school buildings (completed and ongoing) were also collected. Data on school performance was collected with a Pro-Forma administered at the

headquarters, of the States' Ministry of Education; this was subsequently confirmed online from WAEC portal. The data collected were analyzed with the use of tables; percentages were used to determine extent of changes in enrolment and performance in examinations.

4. What are the drivers of innovation in education?

Government in Nigeria has been working very hard to expand the frontiers of opportunities available to her citizens, the government has been working to provide secondary education on large scale and build on the gains of expanded programs to make education accessible to all at the primary level. All these efforts were geared towards meeting the Millennium Development Goals (MDG) and Education for All (EFA) initiatives anchored by United Nations Educational, Social and Cultural Organization (UNESCO).

Mac Arthur Foundation (2013) was of the opinion that the questions requiring urgent answers about secondary education includes: How to increase demand, improve teacher skills, promote employment-relevant skills, and support alternative models of learning for learner in low-income settings. All of these drive innovative approaches in education

5. Research Questions

- What are the innovative practices in education in Osun State?
- What are the effects of these innovations on
 - (a) learning outcome, and
 - (b) enrolment
 - (c) school infrastructures
 - (d) other sectors of the State economy
 - (e) What are the associated cost of these innovations

5.1 Research Question 1: What are the innovative practices in education in Osun State?

Osun State Education Reforms and Innovations

Prior to 2012, the Osun State education landscape was nothing to write about, the performance of students in the state public secondary schools in WAEC NECO conducted examinations was poor, public sector enrolments in both primary and secondary school was very low, and high incidence of out of school children. The confidence of the populace in the state public education was at its lowest ebb, this gave enormous power to the astronomical rise in number of private schools in the state, some of which lacks the personnel and physical infrastructures you can find in public schools.

The Osun Education policy was brewed at the Osun Education Summit, held Feb 7-8, 2011. The summit had the theme “Resolving the Education Crisis in Osun State: Bridging Analysis and Implementation Gaps” The policy was forged from the summit’s communiqué’ and observation. The summit established the following challenges as fueling the crisis in education that necessitated the present reforms and innovations: Infrastructural neglect-basically in collapsed school structures, crowded classrooms, poor feeding, and teachers’ low morale, Lack of instructional materials, high fees in tertiary institutions, low bursary rates, and poor performance of Osun students in both internal and external examinations among others. The summit gave birth to the following innovative policies:

Restructuring of school Administration

The state government restructured the modality for administering the state schools by being more pragmatic in running of all public schools in a way it can engender efficiency and effectiveness.

The core reform here was the creation of specialized agencies to address key components in public school management. The old Teaching Service Commission (TESCOM) was decentralized covering the three senatorial districts in the state. Each of the Educational Districts was headed by a Tutor-General: an equivalent of a permanent secretary in the state civil service. The districts primarily drives the

reform program me while TESCOM serve as the central clearing house and serve in concert with the Ministry of Education..

5.1.2 Reclassification of schools

The reforms made a slight reclassification in the National 6-3-3-4 system, with no fundamental alteration of the scheme. It tinkered with 6-3-3 grouping, - the 12 years of primary and secondary education before the 4 years of tertiary education. It came up with the following reclassification:

- Elementary Schools
- Designed as a neighborhood school for students in the first grade to the fourth grade i.e the present primary 1-4.
- Middle Schools
- The middle school is for the fifth to the ninth grade; which is primary 5- to JSS 111
- High Schools
- The high school comprises of students from 10th grade to twelfth grade which is SSS1-111.

One interesting thing about the reclassification was that it was seamlessly done in a way that minimal disruption of the old system was experienced during the transition to the new school delineation.

5.1.3 Over-haul of school infrastructures

Government believed that conducive school environment will promote learning. Prior to 2012, the state of school infrastructure was horrible that the new government cannot ignore the urgent needs for interventions (Faturoti, 2013). Dilapidated school structures that pose dangers to pupils have been pulled down and blocks of classroom in some primary schools are to be built to provide more space for the projected school enrolment. Elementary, middle and High Schools are currently being built across the 30 Local Government Areas in the State. They are state of the art schools with unique facilities for different school categories in the state.

5.1.4 Model Elementary School Building

Each school building was designed to accommodate 900 pupils with recreational facilities, library and computer laboratory. It is meant for pupils between ages 6-9 in the 1st to 4th grade years. In the first phase 50 of such model schools will be constructed across the state, in all 100 of elementary model school buildings will be built all over the state by the time the intervention programme ends.

5.1.5 Model Middle School Building

The buildings were designed to accommodate between 900 and 1000 students with all equipped with state of the art facilities. Fifty of such model buildings were to be built across the state, already 14 were under construction with a sizeable number already commissioned. The model buildings will house students in their 5th to 9th grade.

5.1.6 Model High School Building

The building will accommodate students between the age brackets 15-17 years. They are students in grades 10 -12 or SS1-111.

Equipped with the best facilities that can be found in best schools around the world. It was designed to accommodate 3000 students. The facilities include standard football pitch, recreational facilities, laboratories, libraries, food courts, and examination hall that can accommodate minimum of 1000 students at a time. Academic activities in these schools will run from 8am to 5pm. Twenty of such schools will be built across the state, already 10 have been awarded and some already commissioned. School Computer System

The state government through Opon Imo made a ground breaking step to utilize ICTs to tackle learning problems. The Opon Imo Initiative, through the State's Opon Imo Technology Enhanced Learning System (OTELS) was developed as a tool to help revolutionize

learning in the state. It is called "Opon Imo," tablet of knowledge.

The Opon Imo has a E- book library consisting of 17 core Subjects with 4 extra- curricular subjects for SS 1,2&3 levels making a total of 55 textbooks available on the Opon Imo platform.

The tablet was also equipped with Virtual Classroom that consists of 17 subjects for Senior Secondary 1,2&3 which culminates into a total of 51 video tutorials made available to students. There are 823 chapters in total with about 900 minutes of audio voiceovers and an average of 16 chapters per course. Opon Imo also boast of an Integrated Test Zone that make available Mock Examination tests from 14 core subjects in WASSCE comprising of 10 years of past questions with an average of 500 questions each and approximately 825 images.

5.1.7 Elementary School Feeding

The school feeding scheme branded O' Meal is currently being implemented in the Elementary school. It is founded on the principle of good nutrition as incentive for learning readiness. O' meal aims at reversing the low academic performance of pupils because good nutrition is necessary for the cognitive development of pupils at those younger ages. The programme was overhauled and rebranded and was extended to pupils in the fourth grade.

5.1.8 School Uniforms

O' Uniforms was conceived with an eye to rebrand public schools in the state as well as boost the Osun economy to employ as many designers, tailors, local textile workers and allied artisans as possible in the production of school uniforms. The unification of school uniforms was part of the efforts made by the Osun government to create a unique identity for all students, promote Nigerian fabrics and stimulate the local economy.

5.2 Research Question 2: What are the effects of these innovations?

(i) Performance in external examinations

Table 1: Performance in WASSCE (Pre- Reform years)

YEAR	NUMBER ENROLLED	NO PASSED(5 CREDITS WITH ENG&MATH)	%PASSED
2008	37,715	3,813	10.11
2009	39,876	5,545	13.98
2010	43,210	6,777	15.68

Source: www.waec.ng

Table 2: Performance in WASSCE (Reform Years)

YEAR	NUMBER ENROLLED	NO PASSED(5 CREDITS WITH ENG&MATH)	%PASSED
2011	53,293	11,672	21.98
2012	51,463	11,431	22.21
2013	47,013	9,301	19.78
2014	47,672	9,316	19.54
2015	48,818	8,801	18.03

Source:www.waec.ng

Table 1 shows the performance of the state in WASSCE between 2008 and 2010. It should be noted that the period was before the various reforms introduced by the government in 2011. The average performance in the period was 13.26%. In 2011 when elements of the reforms started emerging like free and compulsory enrollment of SS3 students in external examinations, the number enrolled jumped from 43,216 candidates in 2010 to 53,293 candidates in 2011 (about 81% increase). The average performance between 2011 and 2015 was 20.31%.

The improvement in performance at external examinations due to the innovations was attested to by Ikhide(2014) when he observed that Osun State position in WAEC performance on 2010 among the 36 states of the federation and the FCT was 34, but by 2011 and 2012, the state occupied 18th and 8th positions respectively.

(ii) Over- hauling of school Infrastructures

Dilapidated school structures that pose dangers to pupils have been pulled down and blocks of classroom in some primary schools were put in place to provide more spaces for the projected increase in school enrollment. As at July 15th 2016 the number of completed school buildings were shown in Table 3 below

Table 3: Completed school buildings under the (O'Schools) project.

Elementary schools	Middle Schools	High School
Baptist Pry Schl, Ilare Ife	L.A Pry Schl Adenle, Osogbo	Wole Soyinka High Schl,Ejigbo
St Micheal Schl, Ode-Omu	Ang Central Schl , Ile Ife	Ayedaade G.H.S.Ikire
St Andrew Schl , Oke Baale	St Stephen Pry Schl Modakeke	Iwo G.H.S, Iwo
St Francis Pry Schl, Iwo	DTTC, Pry Schl, Ijebu- Jesa	Adventist High Schl, Ede
A.U.D,Pry Schl, Isale Osun	St Julius Pry SCHL, Ila	Osogbo G.H.S Osogbo
L.A, Pry Schl, Imo,Ilesa	A.U.D Grammar SCHL, Ejigbo	Fakunle, U.G.H.S Osogbo
St Andrew, Pry Schl, Ada	A.T.C School, Oke oye, Ilesa	Ataoja G.H.S, Osogbo
St Peter Pry Schl, Isona ,Ilesa	Laro Timehin Schl, Osogbo	Ila, G.H.S ,Ila Orangun
L.A Pry Schl,Obada,Ede	N.U.D Pry Schl, Sango,Ikire	Ilesa, G.H.S,Ilesa
Salvation Army,Alekuwodo	Holy Trinity Pry Schl, Ikirun	Oduduwa, G.H.S,Ile-Ife
	A.U.D Pry Schl Iragbiji	Akinorun,G.H.S,Ikirun
	A.U.D Schl, Odo-Ori, Iwo	
	Olufi High Schl,Gbongan	
	Ejigbo Model Schl, Ejigbo	

Source:Osun School Infrastructure Revamp(O'Schools) – The official website of the State of Osun

(iii) Changes in Enrolment figure as a result of Innovations

Table 4: Enrolment figures in Osun Schools between 2010 and 2016

Year	Primary schools Enrolment	Middle Schools Enrolment	High School Enrolment
2010	315432	130196	117885
2011	325495	129847	124176
2012	347894	128967	125895
2013	370497	138151	124244
2014	371057	138016	126371
2015	375990	138151	127178
2016	378660	138054	128075

Source: Ministry of Education, State of Osun

The enrolment in elementary schools has increased by about 40% since the introduction of this scheme (O' Meal) and Osun state now has, according to the National Bureau of Statistic (2013) the highest rate of primary school enrolment in Nigeria. Apart from the increased enrolment rates, absenteeism has also reduced in elementary schools in the state.

(iv) Innovations in School Feeding (O' Meal)

The school feeding programme had the largest impact on education and on the downstream sector of agriculture and women empowerment. The programme upon its introduction boost enrolment at the elementary school by 25% it its first year. Enrolment increased from 254,000 to 365,000.

On weekly basis, 15,000 chickens, 1,800crates of eggs, 400 tons of fresh fish and 35 heads of cattle were used up amounting to ₦14.9 million on school feeding project on daily basis and about ₦3.6 billion annually. However the impact of this scheme reflected so much on employment generation. It has helped to promote local agriculture that benefits rural farmers by using locally sourced foods, providing regular orders and reliable income for local farmers. The programme appointed 3,007 women as food vendors, 1,000 farmers were drawn across the nine federal constituencies of the state, and they were assisted to plant red cocoyam. Recently, 90 women farmers were trained in modern method of cultivating cocoyam and were given financial support after their graduation to commence their farming job.

Research Question 3: What are the associated cost of these innovations

(v) The relative costs of the reform programmes

The school meal programme caters for the lunch of elementary school pupils in all public schools in the State. This amount to providing nourishing food to 262,000 pupils every day. As at July 2013, 15,000chicken, 7,800crates of eggs 4,000 tons of fresh fish and 35 heads of cattle were us on daily basis, translating to ₦14.9 million naira daily it amounted to ₦3.6 billion naira annually.

The contract for the learning tablet (Opon Imo) was awarded to a Chinese firm at ₦1.2billion naira. The cost is to cover the supply of 150,000 units of the tablet. This is to be executed in two phases; 50,000 units were to be directly imported from China while the remaining 100,000 is to be manufactured locally. Out of 33,000 high school students that were to be served in 2013, 28,000 were successfully served within the first few weeks of its distribution. It is to be noted however that the manufacturing of the learning tablet has commenced in the state long ago. Adopting the electronic learning option saved the state government ₦8.4.billion as about ₦9.6billion would have been spent on the supply of the books and instructional materials on the Opon Imo.

The state government established a state of the art garment factory in Osogbo (Omoluabi Garment Factory) to provide common uniform

for Elementary schools; same applies to ₦900million naira for the 750,000 sets.

The cost of constructing the various model schools is difficult to ascertain due to variation in the projected cost of the schools as the time the government of Osun was designing the project. For instance as at 2013, each of the Model Middle school was estimated to cost ₦165million, but as at 2016, the completed school cost the state government ₦370 million each thus the 39 model schools completed cost the government a whopping ₦14.41 billion. The Model High school were completed with all facilities at the rate of ₦750 million each in that regard, the 11 completed High schools cost the state government over ₦8.2billion.

6. Summary of Findings

The innovative practices in Osun State education was designed to cover every aspect of elementary and secondary education; policy, principles and practice of education were affected.

- The innovation resulted in increased enrolment across all grades
- There was a remarkable improvement in school infrastructure, in the form of completed state of the art integrated school buildings.
- The state witnessed an improvement in performance of students in external examinations conducted by West African Examination Council when compared with the pre- innovation era.

7. Recommendations

In view of the relative success of the innovative educational policies in Osun State, the study is making the following recommendations:

- Other states in the federation should understudy the Osun experience and make conscious effort at replicating it in their various education policy programmes
- Successive governments in Osun state should continue to improve on what have been achieved by this policy and

sustained it through further study aimed at providing solution to challenges faced by the current reforms and innovations.

- Government should devise a means of funding the programme in a way it will not be affected adversely by loss in government revenues due to economic imbalances.

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