



THE DEPARTMENT OF FINANCE
UNIVERSITY OF LAGOS
AKOKA, LAGOS.

ROADMAP TO VISION

2020.

ECONOMIC AND FINANCIAL PERSPECTIVES

Second
Annual Conference

date

Tuesday 22nd - Wednesday 23rd April, 2008

venue

University of Lagos Guest - Houses

PREFACE

The Government of Ontario, through the Department of Education, is pleased to announce the publication of the Second Annual Conference (1966) on the theme, *SCIENCE IN THE 1960s: SCIENTIFIC AND EDUCATIONAL RESEARCH*.

The response to the call for papers has been quite impressive.

The content of the papers will be of value to those who are interested in the development of science education in Ontario.

The papers will be published in the *Journal of Science Education*. However, after the Conference the papers will be sent to the *Journal of Science Education* for review. It may be that some of the papers will be published in the *Journal of Science Education* but insufficient space in the *Journal* will be available for the volume of the Department's journals which will be published from the Conference.

Respectfully,
Yours truly,
John H. Houghton, Ph.D.

John H. Houghton, Ph.D.

Director

Department of Education

**EDUCATION AND ECONOMIC GROWTH IN NIGERIA: LESSONS FROM THE G6
AND BRIC COUNTRIES**

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A PAPER SUBMITTED FOR THE SECOND ANNUAL CONFERENCE OF THE

DEPARTMENT OF FINANCE,

UNIVERSITY OF LAGOS, NIGERIA

THEME

**ROADMAP TO VISION 2020: ECONOMIC AND FINANCIAL
PERSPECTIVE**

DATE: APRIL 22ND AND 23RD 2008

EDUCATION AND ECONOMIC GROWTH IN NIGERIA: LESSONS FROM THE G6 AND BRIC COUNTRIES

ABSTRACT

The paper analyzed the effects of education in fostering economic growth. It provides insight into the nature of education and why the public sector should be more involved in its provision. Using a cross-section of countries, education was found to be positively related to economic output. The impact of education is more potent in developing countries than in advanced countries. Also, there is a positive and significant relationship between government expenditure on education and the level of education in a country. The level of commitment of the Nigerian Government, is not adequate to achieve the level of economic growth required to achieve Vision 2020. In view of this, the Nigerian Government should accord the education sector the priority it deserves. One way to do this is to design a plan for the sector.

INTRODUCTION

The realisation of the Vision 2020 is hinged on the attainment of not only a high economic growth rate but also a sustainable one. Specifically, it has been estimated that an average of 12.4% growth rate in GDP is required to actualise the dream of becoming one of the 20 largest economies by 2020, (Soludo 2007). This is definitely a Herculean task for a country with an average GDP growth rate of 5.3 between 2001 and 2005 [National Bureau of Statistics (NBS) 2006].

In order to pave the way for Nigeria to emerge as the next eleven in terms of total output, Soludo (2007) suggested among others, the increase in the commitment to education. This is definitely a laudable suggestion. Of all the factors that influence economic growth – political economic and social – education has been identified to be the most important (Andreosso-O'Collaghan, 2002, Babatunde and Adefabi, 2005). Ideally, what poor economies (like Nigeria) need to achieve rapid and sustainable economic progress is ideas and not object (natural resources). Ideas are generated from the wealth of knowledge acquired by individuals. Such knowledge needed to provide citizens of the poorest countries with a vastly

That is, it is not possible to exclude individuals from consuming the good (Nyborg 2004). Pure public goods are rare. In practice, a public good cannot be provided for profit. Consequently, public goods are normally provided by the state.

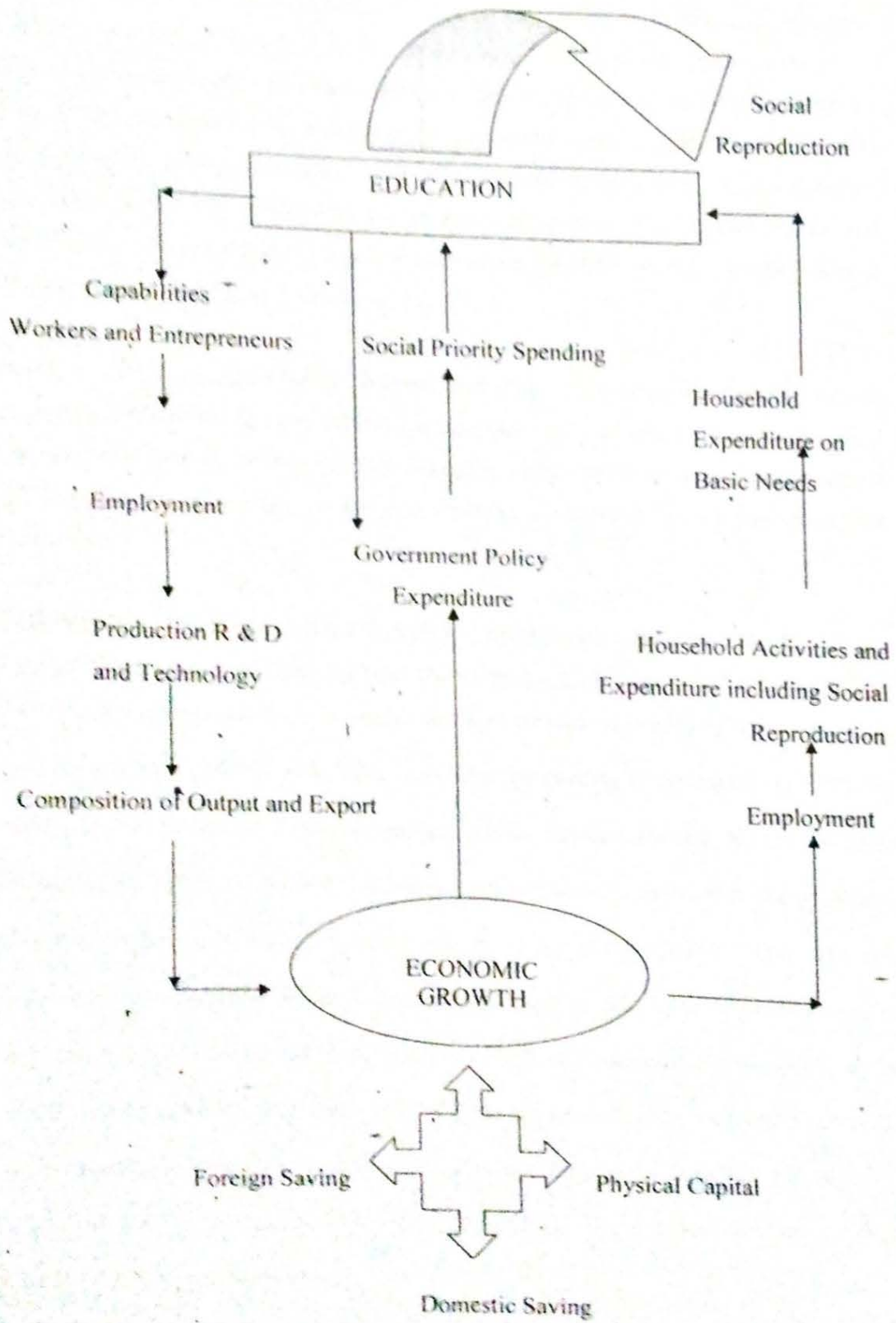
Merit Goods: A merit good is used to describe a good that is under consumed if provided by the market mechanism because individuals typically consider how the good benefits them as individuals rather than the benefits that consumption generates for others in society. In economics, this is because the positive externalities of the good are not internalized by consumers. To increase efficiency, the state may choose to encourage greater production or consumption of a merit good through state provision, regulation, or subsidies to encourage production of the good.

Higher education could be partly referred to as a private good because most graduates capture the benefits of training in the form of higher, additional life-time income. However, education generally is a merit good. In view of this, the state has a role to play in ensuring efficient provision. More so, UNESCO recognized the right to education as a human right, and that higher education is a cultural and scientific asset for both individuals and society (Nyborg 2004). This, in addition to the role education play in economic growth and development, may explain the high level of commitment by the public sector and the corresponding high level of economic performance in developed countries.

2.2 Education and Economic Growth

One important feature to note in education is that 'strong education policies come closest to driving growth by raising the skills and capacities of a country's labour force'. But today's educational activities exhibit a lag of almost 10-15 years before it starts to have effect (Harberger 2005:5). This is true only when education is associated with the labour force. But education also has effect on social reproduction (UNDP 2003:70). Consequently, the lag could become shorter. Investment in education benefits the individual, society, and the world as a whole. To the individual, it improves his health and nutrition; productivity and earnings; and reduce inequality. This last point seems to encompass the first two. For instance, education is seen to be a great 'leveler', illiteracy being the strongest predictor of poverty. Primary education plays a catalytic role for those most likely to be poor, including girls, ethnic minority, orphans, disabled people, and rural families. By enabling larger numbers to share in the growth process, education can be the tide that lifts all boats. Specifically, girls' education reduces women fertility rate, lower infant and child mortality rates, protects against

Fig 1: Relationship between Economic Growth and Education



HIV/AIDS infection, increases women's labour force participation rates and earnings and creates intergenerational education benefits. To the society, it drives economic competition and growth by promoting productivity which lead to higher income and improved economic performance. It also contributes to democratization, peace and security as well as promotes concern for the environment. In view of these, it is generally asserted that any nation that is unable to develop its human resources can hardly develop anything else. For an elaborate review of studies on the impact of education on economic growth, see Glewwe, Maiga, and Zheng (2007). It is also important to note that both education and economic growth reinforce each other as shown in the figure 1 above.

Figure 1 is a slight modification of UNDP model of the the relationship between human development and economic growth. The model portrays lack of education as a structural barrier to economic growth. On the contrary, a sizable accumulation of it, has intrinsic value for people's well-being. Generally, education contributes to economic growth and raises poor people's income.

3. GROSS DOMESTIC PRODUCT, EDUCATION AND GOVERNMENT EXPENDITURE ON EDUCATION IN THE G6, BRIC AND N11 COUNTRIES

Table 1 below shows the Gross Domestic Product (measured in US\$ Billion) of the ten largest economies in the world as at 2001 (note that the ranking is that based on PPPUS\$). They include the G6 [United States of America (USA), Japan, Germany, United Kingdom (UK), France, and Italy] and the BRIC countries (Brazil, Russia, India, and China). It also includes some of the emerging economies – the N11 (Egypt and Nigeria). The table also shows the level of education in these countries as well as the level of commitment to education by the governments of these countries. PEEGDP means ratio of public sector expenditure on education to GDP, while PEETGE means ratio of public sector expenditure to total government expenditure. Incidentally, there were no report on PEEGDP and PEETGE for Egypt and Nigeria between 2001 and 2005. Thus, Table 2 presents the level of commitment to education in Nigeria.

Table 1; GDP and Education . G6, BRIC and N11 Countries

Country/Year	GDP US\$ Billion	GDP Per Capita	Education	Commitment to Education		
				PEEGDP	PEETGE	
USA	2001	10,065.3	35,277	94	5.6	15.5
	2003	10,948	37,648	93	5.9	15.3
	2005	12,416	41,890	93	5.9	15.3
Japan	2001	4,141.4	32,601	83	3.6	10.5
	2003	4,300	33,713	84	3.6	9.8
	2005	4,534	35,484	85.9	3.6	9.8
Germany	2001	1,846.1	22,422	89	4.6	9.9
	2003	2,403	29,115	89	4.6	9.8
	2005	2,794	33,890	88	4.6	9.8
UK	2001	1,424.1	24,219	112	4.6	12.1
	2003	1,795	30,253	123	5.4	12.1
	2005	2,198	36,509	93	5.4	12.1
France	2001	1,309.8	22,129	91	5.7	11.4
	2003	1,757	29,410	92	5.9	10.9
	2005	2,126	34,936	96.5	5.9	10.9
Italy	2001	1,088.8	18,788	82	5.0	9.5
	2003	1,468	25,471	87	4.7	9.6
	2005	1,762	30,073	98.4	4.9	9.6
China	2001	1,159	911	64	2.3	13
	2003	1,417	1,100	69	1.9	13
	2005	2,234	1,712	69.1	1.9	13
Brazil	2001	502.5	2,915	95	4.0	10.4

	2003	492	2,788	91	4.4	10.9
	2005	796	4,271	87.5	4.4	10.9
India	2001	477.3	462	56	4.1	12.7
	2003	600	564	60	3.8	10.7
	2005	805	736	63.8	3.8	10.7
Russia	2001	310	2,141	82	3.1	10.6
	2003	433	3,018	90	3.6	12.9
	2005	764	6,336	88.9	3.6	12.9
Egypt	2001	98.5	1,511	76	-	-
	2002	90	1,354	76	-	-
	2003	82	1,220	74	-	-
	2004	79	1,085	76	-	-
	2005	89	1,206	76.9	-	-
Nigeria	2001	41.4	319	45	-	-
	2002	43.5	328	45	-	-
	2003	58	428	64	-	-
	2004	72	560	55	-	-
	2005	99	752	56.2	-	-

Source: UNDP World Development Reports 2003 – 2007

Table2: Commitment to Education in Nigeria

Year	Total Government Expenditure on Education (1)	Total Government Expenditure (2)	GDP at Current Market Prices (3)	Ratio of (1) to (2) (4)*	Ratio of (1) to (3) (5)*
2001	59744	1018298	7055331	5.8	0.85
2002	109455	1188744	7984385	9.2	1.4

2003	79435	1225956	10136364	6.4	0.78
2004	93767	1302231	11673603	7.2	0.8
2005	120034	1799918	.	6.6	.

Source: Central Bank of Nigeria (CBN) Statistical Bulletin

* Author's calculation

4. EMPIRICAL RESULTS

4.1. Presentation and Interpretation of Regression Results

Applying the model in figure 1 to the data in Table 1, the ordinary least squares (OLS) technique was used to evaluate the effect of education in economic growth. Two equations were estimated. The first specified economic growth as a function of education, while the second specified education as a function of government expenditure on education. The results are presented in Tables 3 and 4 below.

Table 3: Empirical Relationship between Economic Growth and Education

Dependent Variable: LnGDP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
	ALL	G6 AND BRIC	NI1
	OBSERVATION		
C	1.85 (1.854)**	5.76 (5.427)*	3.073 (8.481)*
EDU	0.059 (4.868)*	0.018 (1.552)	0.018 (3.385)*
R ²	0.384	0.079	0.589
R ² (obs)	0.368	0.046	0.537

Figures in parentheses are t-values, * represent 1% significance and ** represent 10%

significance

Table 4: Empirical Relationship between Education and Government Expenditure.

Dependent Variable; EDU

C	PEEGDP	R ²	R ² _{adj}
53.3 (6.315)*	7.599 (4.042)*	0.368	0.345

Figures in parentheses are t-values, * represent 1% significance and ** represent 10% significance

Table 5. Pairwise Granger Causality Tests

Sample 1-40 Null Hypothesis	Obs	F-Statistic	lags: 3 Probability
GDP1 does not Granger Cause EDU	37	0.23591	0.87062
EDU does not Granger Cause GDP1		5.51329	0.00388

The study employed a partial equilibrium approach; where all other factors of economic growth were assumed constant. The first equation used the entire forty sample size. In this equation, GDP was regressed on education. The result shows a positive and significant relationship. The model explained about 38 percent of the systematic variation in GDP. The entire sample size was disaggregated into the G6 and BRIC countries on one hand and the N11 countries on the other. The result shows that education positively influenced economic growth in both samples. The coefficients of EDU were also the same, but their level of significance were different. While that of the N11 countries was accepted at the 1% level, that of the G6 and BRIC countries was found to be insignificant even at the 10% level. Also, a greater proportion of changes in GDP was explained by the N11 equation than The G6 and BRIC equation.

Equation 4 (see Table4) used data from the G6 and BRIC countries. The rate of education was regressed on public sector commitment to education (PEEGDP). The result shows that public sector expenditure on education has a positive and significant effect on the

development of education. In order to test the possibility of a feedback, a Granger causality test was conducted. The result shows a uni-directional effect between education and economic growth. The result shows that education Granger causes GDP.

4.2 Commitment to Education in Nigeria

Government expenditure as a ratio of total government expenditure ranged between 5.8 and 9.2 between 2001 and 2005 (see Table 2). This figure is not only less than what obtained in any of the countries studied, it is also a far cry from the 26% prescribed by UNESCO. The highest proportion of education to GDP stood at 1.4% (2002). This ratio was less than 1% for all other period between 2001 and 2005. This is quite low when compared with figures from the G6 and BRIC countries, which stood at a minimum of 9.6% during the period under review.

Our findings supports the studies of other researchers such as Schultz, 1981, Andreosso-O'Callaghan, 2002, Heckman, 2002, and Babatunde and Adefabi, 2005 which attributed the development of the American economy, and many other countries across the world to the development of their human capital – the knowledge and skills of the population. Thus, the need for appropriate human capital development and accumulation is a prerequisite for modern economic growth in both developed and developing countries. Similarly, our result on the effect of government expenditure on education supports that of Omotor, 2004. –

4.3 Policies to Foster Education and Promote Rapid Economic Growth in Nigeria

An effective policy and strategy for the Nigerian education sector must take the following facts into consideration. Firstly, the level of poverty is very high. This could influence parents to withdraw their children from school to engage in child labour in order to augment the income of the household. Secondly, education is both a merit and public good. Consequently, the market will be inefficient in allocating it. The essence of restructuring the

economy, especially the public sector, is partly to free resources that will be diverted to the provision of social infrastructure, which include education. In view of all these facts, we proffer the following suggestions;

1) It is often asserted that a country that fails to plan, has planned to fail. Thus, the starting point of the development of the educational sector is the design of a comprehensive plan for the education sector. This plan will synchronize all the features of the sector and stipulate realistic targets which must be pursued vigorously

2) The current policy to liberalize the education sector is no doubt a laudable one. This has led to the establishment of many private universities. Two issues of concern here are (i) the high school fees, which made it unaffordable by a vast majority of the populace, and (ii) the need to guarantee high quality. Both issues call for more government intervention

3) The wide ranging effects of education on economic development should always form the basis for investment in education. This is because of its effects in the socio-economic and political life of the citizens

5. SUMMARY AND CONCLUSION

The study evaluated the effect of education in economic growth in a cross-section of countries. It also evaluated the effect of government expenditure on education. The G6, BRIC and N11 countries were used as a sample. The result revealed a positive and significant relationship between education and economic growth on one hand and between government expenditure and education on the other. On the basis of the low level of education in Nigeria, it was suggested that more priority should be accorded the education sector in order for it to play its role of promoting economic growth efficiently

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