

Input-Output Analysis of Eko Project Training Programme in Lagos State Secondary Schools, Nigeria

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Abstract This study examined the extent to which Lagos Eko project training had enhanced the teachers' performance and the academic performance of the students in Lagos State Secondary Schools, Nigeria. It also investigated the perceptions of teachers and students on the school provision of supportive facilities to aid the Eko Project training. The study adopted descriptive survey and ex-post- facto research designs. Using the whole population of the 24 trained teachers enrolled for the 2012 Lagos Eko Secondary Education Training in Production and Utilisation of Media as the sample for the study, the standardised Lagos Eko Secondary Education Project information sheet, Registration forms filled by the participants, Students academic profiles from the school records before and after the training; and a questionnaire for students to elicit information on the quality of the teacher's instructions before and after the training were used as the instruments to guide answers to the research questions. T-test and Multivariate Analysis of Variance statistical tools were used to test the hypotheses. Findings revealed that the perceptions of teachers and students to the quality of instruction delivery after the exposure of trainee teachers to Eko project training did not differ, and that the exposure of trainee teachers to Eko project training enhanced their quality of instruction delivery in classrooms after the training. Also, a significant difference was found to exist in the perceptions of the respondents to the provision of supportive facilities to aid the implementation objectives of the intervention project which implies the dependence of the success of Eko project training on the provision of required facilities to support instruction delivery. The study also found a significant difference in the academic performance of students before and after being taught by Eko project trainee teachers and that the effect of the Eko project accounted for 90%, 84% and 46% of the variability in Mathematics, English language, and Basic Science performances respectively. Based on the findings therefore, It was recommended that the project should be a continuous process towards enhancing sustainable students' good academic performance in the state secondary schools, and that efforts should be made by the World Bank to extend this project to the other states for holistic and effective transformation of secondary education in the country.

Keywords: *Input-Output Analysis, Eko training Project, secondary schools, Lagos State*

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1. Introduction

The Lagos Eko Secondary Education project is a \$90 million partnership between Lagos State Government and the World Bank with the overall objective of improving the quality of education and enhancing learning outcomes in public junior and secondary schools in the State (Lagos Eko Project, 2013a).

The Project is an intervention targeted at addressing the deteriorating quality of education in the state particularly the West African Examination Council Examination (WASCE) results and by focusing on learning outcomes in core subjects (English, Mathematics and the Sciences).

The Lagos Eko Project is the first education intervention in Lagos State with exclusive focus on 'enhanced learning outcomes'. An integral part of this process is the administration of standardized students' assessments to show the learning gains achieved by students over time and make learning outcomes more manageable and better understood. These students' assessment results are tracked by comparing successive results of baseline and end of the year. According to Adekola (2012), Since inception, there has been steady progression in students' performance based on percentage gains from baseline and subsequent assessments. This is made possible by the inbuilt result monitoring framework at the initial stage of the project with Key Performance

Indicators for the project development objectives covering grant disbursement, teachers' professional development, standardized students' assessment and attendance. Also, Zonal Project Administrators are responsible for gathering school data at the district while grant monitoring is carried out with the involvement of a number of stakeholders.

There are four components to the project, namely; the school development grants which enable the provision of yearly discretionary resources with an explicit focus on improving the quality of education services as priority needs and raising education outcomes in Public junior and senior secondary education; enhancing quality assurance for junior and senior secondary schools which enables the establishment of a standardized system for measuring student's learning achievements in core subject areas and support teachers to develop the skills needed to better teach these areas; project coordination and management which provides the necessary resources for effective coordination and monitoring and evaluation, and the implementation of an information and communications strategy; and strengthening of the federal post-basic education strategy whose objective is to provide capacity building and technical assistance to the federal ministry of education to enhance the development of the national post-basic education strategy and support policy dialogue on the strategy with states (Lagos Eko Project, 2013b).

2. The Problem

Despite the well applauded impact of the Lagos Eko secondary education project on students' performances by majority stakeholders, particularly the World Bank Implementation Status reports (Adekola, 2012 and Garcia, 2011), there was still the need to investigate in concrete terms its overall impact on academic performance of the students.

Therefore, the purpose of the Study was to find out the extent to which Lagos Eko project training had enhanced the teachers' performance and the academic performance of the students.

3. Research Questions

- i. To what extent has Eko Project training programme influenced the quality of instruction of teachers?
- ii. Is there any significant difference in the perceptions of teachers and students about the school provision of supportive facilities to aid the Eko Project training?
- iii. Is there any significant difference between the academic performance of the students before and after the Eko training programme?

4. Research Hypotheses

- i. There is no significant difference in the perceptions of teachers and students to the quality of instruction delivery after the Eko project training.
- ii. There is no significant difference in the perceptions of teachers and students about the school provision of supportive facilities to aid the Eko project training.
- iii. There is no significant difference in the academic performance in (i)

- iv. Mathematics, (ii) English Language, (iii) Basic Sciences of students before and after being taught by Eko project trainee teachers.

5. Methods

5.1. Participants

The whole population of the 24 trained teachers that enrolled for the 2012 Lagos Eko Secondary Education Project Training in Production and Utilization of Media was used as the sample for the study. A total of 33 Junior and Senior secondary students from the sampled schools were also used to respond to a questionnaire on the quality of the teacher's instruction delivery before and after training.

5.2. Procedure

The descriptive survey and ex-post facto designs were adopted in the study. The instruction deliveries of the sampled trained teachers were examined by the researchers after which two sets of questionnaire were administered to the teachers and students respectively. The sets of questionnaire tagged students' Questionnaire on Teachers' Quality of Instruction Delivery (S2QID, $r = .92$) and Teacher's Questionnaire on Lagos Eko Project (TQLED, $r = .78$) for students and teachers respectively were first validated using item analysis before their administration. Independent t- test and Multivariate Analysis of Variance (MANOVA) statistical tools were used for the data analysis.

5.3. Materials

The research instruments consisted of the standardized Lagos Eko Secondary Education project information sheets; registration forms filled by the participants (24 trained teachers); students' academic profiles from the school records before and after the training (these comprised 2009 and 2012 Junior/Senior West African Examinations Council (WAEC) results which were used as baseline and post Eko training performances of the students respectively); a students' questionnaire (S2QID, $r = .92$) which was used to elicit information from the students on the quality of the teachers' instruction delivery before and after the training; and a teacher 's questionnaire (TQLED, $r = .78$) used to garner information on the supportive facilities made available in the schools.

6. Results

6.1. Research Hypothesis 1

Ho₁: There is no significant difference in the perceptions of teachers and students to the quality of instruction delivery after the Eko project training.

Table 1 shows the result of the analysed data using the independent mean test. It shows the mean scores on teachers and students' perceptions to quality of instruction delivery after Eko project training. The result shows very close mean scores between the teachers and the students. The teachers' average score is 13.94 while that of the students is 14.03. This is very narrow and shows that there

is a harmony in their perceptions regarding the quality of teachers' instruction delivery.

Table 1. Mean score test of teachers and students' perception

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
TRAINING TOTAL	STUDENTS	0 ^a	.	.	.
	TEACHERS	18	5.7778	.94281	.22222
PERCEPT TOTAL	STUDENTS	29	14.0345	1.23874	.23003
	TEACHERS	18	13.9444	.99836	.23532

Table 2 shows the result of data analyzed using the t-test statistical method regarding the quality of instruction delivery by the teachers exposed to the Eko project training. The t test results revealed the t value associated with the scores of teachers and students regarding the quality of instructional delivery by teachers. This difference was not statistically significant, $t(45) = .260$, p

$> .05$. This in essence means the perceptions of teachers and students about the quality of instruction delivery after the exposure to Eko project training were not different. It was further revealed that the exposure of trainee teachers to Eko project training enhanced their quality of instruction delivery in classrooms after the training.

Table 2. T test score of teachers and students' perception

TEACHERS' PERCEPTION		F	Sig.	t
PERCEPT TOTAL	Equal variances assumed	.287	.595	.260
	Equal variances not assumed			.274

6.2. Research Hypothesis 2

Ho₂: There is no significant difference in the perception of teachers and students about the school provision of supportive facilities to aid the Eko project training.

Table 3 presents the results of the t test analysis of the hypothesis regarding the school provision of supportive facilities which could aid the success of the Eko project.

Table 3. t test analysis result on supportive facilities to aid Eko project training

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
FACILITIES TOTAL	26.800	65	.000	8.66667	7.9844	9.3489

6.3. Research Hypothesis 3

Ho₃: There will be no significant difference in the academic performance in (i) Mathematics, (ii) English Language, (iii) Basic sciences of students before and after being taught by Eko project trainee teachers.

(i) Mathematics

Wilks' Lambda Mathematics, $F(3,17) = 561.3$; $p < .05$ and partial eta square .39. This means that the f value associated with the Manova is statistically significant and that the effect of the Eko project accounts for 93% of the variability in the canonical variate of Mathematics performance. Therefore, the null hypothesis which says there is no significant difference in the academic performance in Mathematics before and after being taught by Eko project trainee teachers is hereby rejected. This in essence means that there is a significant difference in the academic performance of students in Mathematics after and before the Eko project training.

(ii) English Language

Wilks' Lambda English Language, $F(3,17) = 205.2$; $p < .05$. This means that the f value associated with the Manova is statistically significant and that the effect of the Eko project accounts for 84% of the variability in the canonical variate of English performance. Therefore, the null hypothesis which says there is no significant difference in the academic performance in English

The t test result shows that the difference was statistically significant, $t(65) = 26.8$, $p < .01$. This indicates that a significant difference existed in the perceptions of the respondents about the provision of supportive facilities to aid the implementation objectives of the intervention project. The success of the training is largely dependent on the provision of required facilities to support instruction delivery.

Language before and after being taught by Eko project trainee teachers is hereby rejected.

(iii) Basic Sciences

Wilks' Lambda Basic sciences, $F(3,17) = 33.2$; $p < .05$. This means that the f value associated with the Manova is statistically significant and that the effect of the Eko project accounts for 46% of the variability in the canonical variate of Basic science performance. Therefore, the null hypothesis which says there is no significant difference in the academic performance in Basic sciences before and after being taught by Eko project trainee teachers is hereby rejected.

7. Major Findings

The perceptions of teachers and students to the quality of instruction delivery after the exposure of trainee teachers to Eko project training do not differ. The perceptions revealed that the exposure of trainee teachers to Eko project training enhanced their quality of instruction delivery in classrooms after the training.

A significant difference existed in the perceptions of the respondents regarding the provision of supportive facilities to aid the implementation objectives of the intervention project. By implication, the success of this training is largely dependent on the provision of required facilities to support instruction delivery.

A significant difference existed in the academic performance of students before and after being taught by Eko project trainee teachers. The effect of the Eko project accounts for 90%, 84% and 46% of the variability in Mathematics, English language, and Basic Science performances respectively. This shows that there was an improvement in the students' academic performances after the exposure of their teachers to Eko Project Training.

8. Discussion of Results

The findings revealed by the perceptions of teachers and students that the exposure of trainee teachers to Eko project training enhanced their quality of instruction delivery in classrooms after the training is supported by the findings of Adeyanju (2003) that learning can be reinforced with learning aids of different variety because they stimulate, motivate as well as arrest learner's attention for a while during the instructional process and therefore, the need for development of skills by teachers undergoing their training so that they could be able to use a wide variety of instructional materials sufficiently well.

The significant difference that was found to exist in the perceptions of the respondents regarding the provision of supportive facilities to aid the implementation objectives of the intervention project, which implied the dependence of the success of Eko project training on the provision of required facilities to support instruction delivery is confirmed by the study of Ayoo (2002) on the effects of school physical facilities on academic performance which established that availability of facilities had a direct link with the performance of learners in examination.

In the same vein, Muthamia (2009) and Adeogun (2001) assert that effective teaching cannot take place within the classroom if basic instructional resources are not adequate implying that learning is strengthened when there are enough reference materials such as textbooks, stationary and teaching aids. With regards to the teaching and learning of science subjects, Arokoju and ugonna (2012) posit that the quality and effective teaching of chemistry depends largely on adequate provision and proper utilization of instructional resources.

Also, the findings that a significant difference existed in the academic performance of students before and after being taught by Eko project trainee teachers with the effect of the Eko project accounting for 90%, 84% and 46% of the variability in Mathematics, English language, and Basic Science performances respectively is supported by Bassey (2002), who reported that students taught with the standardized instructional materials had the highest achievement. This is also in line with the findings of Afuwape (2004), Adu and Olatundun (2007), Agharuwhe (2009), and Afolabi, Abidoye and Afolabi (2013) which report that instructional materials enhance students' achievement and enrich classroom instruction. Also, that schools with adequate facilities perform better in examination and effective teachers produced high performing students. That is why Aiyepoku (2006) asserts that learning facilities are indispensable in the learning process as adequate instructional facilities will enhance students' academic performance whereas inadequate instructional facilities affect the quality education.

Furthermore, in a study on the effects of instructional resources on students' performance in West Africa School Certificate Examinations (WASCE) in Kwara State, Momoh (Isola, 2010) found that material resources have a significant effect on student's achievement in each of the subjects' level of performance.

9. Recommendations

Consequent upon the findings of this study, it is therefore recommended; firstly that the training should not be limited to English Language, Mathematics, and Basic Sciences only but should also be extended to other subject areas; Secondly, this project should be a continuous process on the part of the Lagos State Government to enhance students' good academic performance in internal examinations organised by the schools and external examinations conducted by the West African Examination Council (WAEC), National Examination Council (NECO) and the likes; thirdly, there should be adequate provision of supportive facilities put in place in our schools to aid the effective implementation of this project. Availability of the required facilities has a direct link with the performance of learners in examinations. Fourthly, there is a correlation between job satisfaction and job performance. Based on this premise therefore, Eko project trained teachers should be well remunerated, motivated, and rewarded towards job performance and effective instruction delivery so as to the turn the policy and overall goals of this project to reality. Finally, the project should be extended to the other states of the Federation to reflect holistic, effective, and result oriented transformation in secondary education sub sector in the country.

10. Conclusion

In this study, the effect of the Lagos Eko Project Training on the teachers' performance and students' academic performance in the Lagos State secondary schools was investigated and established. It was found that this project improved the instruction delivery of the teachers and enhanced the students' academic performance after the training. Efforts should therefore be made by the World Bank to extend this programme to the other states in the country for holistic and result oriented transformation at the secondary level in the country.

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