



COMPARISON OF EFFECTS OF INQUIRY AND TASK-BASED METHODS ON PERFORMANCE IN ECONOMICS AMONG RURAL AND URBAN SECONDARY SCHOOL STUDENTS IN IMO STATE, NIGERIA

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Abstract

*This study was conducted on the comparison of the effects of Inquiry and Task-based methods on students' performance in Economics on rural and urban schools. The design for the study was experimental design. The population of the study was ten thousand two hundred and forty four students of secondary schools in Imo state and the sample of the study was three hundred and six (306) students selected through purposive technique. Economics Students Inquiry and Task-based Performance Test (ESITPT) was used for data collection while *t*-test and Anova were used to analyse the data. The result shows no significant difference between effects of Inquiry and Task-based method on performance in Economics with ($t=1.271$, $p=0.205$), rural and urban schools taught using inquiry method ($F=2.856$, $P=.092$) and rural and urban schools taught using Task-based method ($F=.216$, $P=0642$). Therefore, it was concluded that there is no significant difference in the effect of using either Inquiry or Task-based method on students' performance both in rural and urban locations. Thus, it was recommended that both Inquiry and Task-based methods should be used by secondary school teachers to teach Economics in both rural and urban areas.*

Keywords: *Inquiry method, Task, Task-based method, Economics*

Introduction

The fundamental goal of Economics education is to equip learners with positive knowledge, attitudes, values and skills for the purpose of producing competent,

humane and effective citizenry who can contribute positively to the good of society by being efficient managers of the nation's scarce resource (Federal Republic of Nigeria, 2008). However, academic performance of Nigerian students in school subjects including Economics at the secondary school level has remained poor over the year (Obika, 2010).

In Imo state, performance of Economics students is observed to be deplorable and below expectation following the WAEC of 2013 and 2014. Statistics showed that out of a percentage of 100 students that sat for the examination within the year under review, an approximate percentage of 34.89% passed with credit, while a total of 65.11% had ordinary pass and failure. It was obvious that students in the study area had inadequate knowledge of the subject Economics. The report showed that students lacked knowledge of plotting graph, answer questions that involve calculations, use of wrong terminology, failure to expatiate points, etc. These identified problems could have arisen due to insufficient knowledge and teaching methods employed on the side of the teachers. However, considering the inherent benefits associated with inquiry and task-based methods of teaching a subject such as; Economics might be of eminent benefit in solving these identified problems. As noted by the Chief examiners' report, most teachers are unable to cover all aspects of the Economics syllabus before presenting their wards for public exams. This could be associated with drawbacks attached with lecture method of teaching popularly used in most of the secondary schools today. On this background arose the need for this study.

Research Questions

The following research questions were raised by the researchers:

1. What is the effect of inquiry method on the performance of rural and urban students taught Economics in secondary schools in Imo state?
2. What is the effect of task-based method on the performance of rural and urban students taught Economics in secondary schools in Imo state?
3. What is the difference in the performance in Economics taught using inquiry and task-based methods among secondary schools students in Imo state?

Research Hypotheses

The following hypotheses were tested in the study.

- H₀₁: There is no significant difference in the effect of inquiry method on students' performance in rural and urban located secondary schools in Imo state.
- H₀₂: There is no significant difference in the effect of task-based method on students' performance in rural and urban located secondary schools in Imo state.
- H₀₃: There is no significant difference in the pre-test and post-test performance of students taught Economics using task-based method in secondary schools in Imo state.

Review of Empirical Studies

Inquiry and task-based methods as stated in Oliver-Hoyo (2011:53) relate to the view of constructivist learning which involves the use of “manipulative or hands-on materials”, “incorporating, inquiry, discovery and problem-solving approaches and applying Economics and science concepts to real-world context”. Similarly, both methods of learning associate with the activities in the classrooms to distinct careers and involve the original data analysis. It also inspires both collaboration and communications by the students (Marshall, 2010). Marshall found support for the idea that, there is effectiveness for inquiry presentations for improving the performance of students as well as satisfaction of the teachers when progress has been made on the side of the students.

Inquiry has been defined by many scholars in different ways. It generally refers to the art and science of asking questions that are accessible, and can be answered in part or in whole, and ones that lead to meaningful tests and explorations (Herbrank, 2010). The inquiry technique usually involves careful observations and assessment, hypothesizing and interpreting, and theorizing. It requires experimentation, reflection and recognition of the strengths and weaknesses of its own techniques (Budnitz, 2007). In education, while much thought and research have been devoted on the role of inquiry in science education, this effort can be replicated to other disciplines such as social sciences, arts, humanities to mention but a few (Gallagher, 2011). There are

strong arguments for choosing an inquiry-based approach. An inquiry-based curriculum develops and validates habits of mind that characterize a life-long learner.

It teaches students to pose difficult questions and fosters the desire and skills to acquire knowledge about the world (Cross and Frary, 2007). Students are given opportunities to take ownership of their own learning, a skill necessary for one to succeed in school and in most professional settings. Additionally, an inquiry-based approach allows students to draw connections between academic contents and their own lives, which can be particularly important for culturally and linguistically diverse learners (Coutler, Feldman and Konold, 2011).

There are various levels of inquiry learning approach, such as confirmation inquiry, structured inquiry, guided inquiry, as well as open inquiry (NAS, 2010). In a confirmation enquiry (level 1), learners have been taken through a lesson by the teacher, then questions and procedure that guides the students through an activity that defines the result, the teacher thereafter confirms students understanding through assessment of any sort. In a structured inquiry approach (level 2) allows the learners to show their creativity in discovery true solutions of questions possessed by the teacher in the course of teaching. In the guided inquiry (level 3), the role of the teacher changes, he becomes an active partner and guides and advices students on the procedure of defining research questions and possible solutions. In an open inquiry (level 4), the learner becomes the investigator, he formulate research question(s), design, develop procedure, generate data, analyse, discuss findings and communicate results. Although, this stage of inquiry is done within the framework of quasi-experimental research designs (Hall, 2008). Although these tasks occur in a logical progression, inquiry is a fluid process, and one task may lead back to a previous task. This process is illustrated in figure 1.

Task-based learning as defined by Kawasaki (2021) is a method of teaching in which lesson is structured to incorporate different activities to solve a task and the task can span the length of an entire lesson or, if it's project-based learning, it can take up several lessons to complete. Essentially, the task can be big-picture assignment that students are trying to complete or solve, and the activities are the individual steps or exercises they take to achieve the task. Hall

(2008) and Kawasaki (2021) states the following steps in carrying out task activity as discussed below.

The pre-task: During this stage, which can take up a whole lesson if needed, the teacher introduces the task to the students and gets them motivated to solve it.

The task: This is the main stage of task-based learning, where students start working on the task, usually in groups or pairs. This stage is done in the target language so that students feel the need to use the language they want to learn in order to solve the task.

The review (or post-task): Once the students have completed the task and have something to present, the review stage, also known as the post-task, starts. Peer correction could be carried out in the form of comments, feedback discussions, or a checklist with additional room for free commentary.

Academic performance has been described as the scholastic standing of a student at a given moment. This scholastic standing could be explained in terms of the grades obtained in a course or groups of courses (Adeyemi, 2011). Oderinde (2009) commented on this scholastic standing and argued that performance is a measure of output and that the main outputs in education are expressed in terms of learning, that is, changes in knowledge, skills and attitudes of individuals as a result of their experiences within the school's system. Academic performance in this study is Economics which was first taken in the year 1967 as a school subject at the West African School Certificate Examination (Obemeata, 2009)

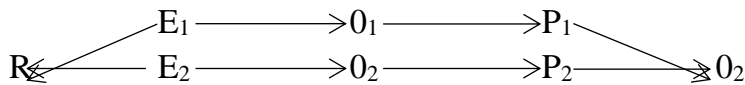
Empirically, Inyama (2009), sought to find out the influence of both school location on the knowledge of Economics and performance by assessing twelve (12) students in Ebonyi State South. The result obtained did not show any significant difference between the male and female students respectively. Ojo (2007) and Oladibo (2009) identified that there were no significant difference between students of urban and rural area taught with inquiry or lecture method of instruction. While, (Awosoyin, 2009) indicated that male students urban schools perform significantly better than their counterparts in the rural schools due to their exposure in inquiry method of teaching. Anyaso and Ugo (2012), Olabode (2010) and Odundo and Gunga (2013) investigated the relative

effectiveness of inquiry and task-based methods of teaching and found no significant effect of each on performance of students.

Methodology

The research design used for this study was a two by two pre-test - post-test quasi experimental design with non-equivalent groups. This design according to Olayiwola (2007), provides some degrees of control for possible confounding variable that might hinder the internal or external validity or both.

Figure1: Quasi-experimental design patten is shown in figure 1.



The symbols are represented as follows:

E_1 = Experimental group (Inquiry method), P_1 = Treatment using IM

E_2 = Experimental group 2 (Task-based method), P_2 = Treatment using TBM

O_1 = Pre-test

O_2 = Post-test

In line with the illustrated research design, students in both experimental group (inquiry and task-based methods) were exposed to pre-rest using the Economics and task-based Performance Test (ETBPT). After the treatment, the (ETBPT) was rearranged and administered as post-test on both the experimental.

The population for this study comprised all the SSII Economics students in public senior secondary schools in Imo State, Nigeria. Statistics from Imo State Secondary Education Management Board (SEMB, 2015), shows six (6) educational zones across twenty-seven (27) Local Government Education Areas (LGEAs) totaling to ten thousand two hundred and forty four (10,244) students with 4816 male and 5408 female students. The sample size for the study consisted of three hundred and six (306) SSII students offering economics who were purposively drawn from six (6) selected secondary Schools in Imo State. This sample is in accordance with central limit theorem and in tune in Gredler (2010) who opined that, sample is drawn on the basis of population spread over a wide range of area for the purpose of getting a meaningful representation. The sample is viewed as presented in table2 below.

Table 2: Sample Distribution of Respondents

S/No	Schools	Male	Female	Total
1.	Emmanuel College Owerri	27	21	48
2.	Okofe Secondary School Ezinihitte Mbaise	37	15	52
3.	Awo Idemili Secondary School	21	23	44
4.	Aboh Mbaise secondary School	39	14	53
5.	Comprehensive Secondary School, Amaifeke Orlu	36	15	51
6.	Owerri City School, Owerri	34	24	58
Total		194	112	306

The instrument tagged “Economics Students Inquiry and Task-based Performance Test (ESITPT) was used in this study for the purpose of data collection. It consisted of fifty (50) multiple-choice assessment items and it was validated by Economics experts and researchers’ in the Department of Educational Foundations and Curriculum, Faculty of Education, Ahmadu Bello University, Zaria. It was pilot tested within the population but outside the sample of the study which resulted in reliability coefficient of =.733 in line with Stephens (1986), and Olayiwola (2010) state that the closer the instrument is to 1.00, the more reliable it is. The treatment plan covered ten (10) weeks of teaching using inquiry method. Extraneous variables were controlled and data collected were analysed using descriptive statistics t-test and ANCOVA.

Results and Discussion

This section deals with descriptions of respondents, Analysis of research questions and hypotheses testing.

Table2: Description of Study Variables

Method	Frequency	Percent	Valid Percent	Cumulative Percent
Inquiry	146	47.00	47.00	47.00
Task-Based	160	53.00	53.00	
	306	100		

Table 2The first consist of 146 representing 47.0% that are taught Economics with Inquiry method while 160 representing 53.0% were taught with the Task based.

Table 3: Distribution of Students according to Location

	Frequency	Percent	Valid Percent	Cumulative Percent
Rural	153	50.0	50.0	50.0
Urban	153	50.0	50.0	50.0
Total	306	100.0	100.0	

A total of 153 or 50.0% are from rural located schools while the rest 153 or 50.0% are schools located in the urban schools

Analysis of Research Question

This section is the analysis of all the research questions as shown below:

Research Question one: What is the effect of inquiry method on the performance of rural and urban students taught Economics in secondary schools in Imo state?

Table4: Descriptive Statistics of Difference in Effects of Inquiry Method on Students' Performance in Rural and Urban Areas

Areas	N	Mean	SD
Rural	76	44.3725	4.40890
Urban	77	42.4894	5.86764

Table4 above shows mean scores of 44.3725 and 42.4894 for post test result of performance of students taught using Inquiry method in rural and urban schools of Imo state. Thus, the performances of the student from both the rural urban schools did not differ significantly as the mean difference is 0.8831.

Research Question two: What is the effect of task-based method on the performance of rural and urban students taught Economics in secondary schools in Imo state?

Table5: Descriptive Statistics of Difference in Effects of Task-based Method on Students' Performance in Rural and Urban Areas

Schools Areas	N	Mean	SD
Rural School	76	44.3800	3.99433
Urban Schools	75	44.1930	3.78172

Table5 above shows mean scores of 44.3800 and 44.1930 for post test result of performance of students taught using Inquiry method in rural and urban schools. Thus, the students’ performances from both the rural and urban schools did not differ significantly as the mean difference is 0.187.

Research Question three: What is the performance of students taught Economics using Inquiry and those taught using task-based methods in secondary schools in Imo state?

Table 6: Descriptive statistics on differences in the performance of students taught Economics using Inquiry and those taught using task-based methods

Variable	Groups	N	Mean	Std.dev	Std.Err	Mean Diff	Remarks
Performance	Inquiry	146	43.47	5.219	.527	0.811	The performance of students of Inquiry and Task based methods are the same
	Task Based	160	44.28	3.865	.374		

Table6 shows no differences between students’ performance in Economics taught using Inquiry and task-based methods with Mean performances of 43.47 and 44.28 respectively.

Hypotheses testing

H01: There is no significant differences in the performance of students taught Economics using Inquiry and those taught using task-based methods in secondary schools in Imo state.

Table 7: Independent t test on differences in the performance of students taught Economics using Inquiry and those taught using task-based methods in secondary schools in Imo state

Variable	Groups	N	Mean	Std.dev	Std.Err	MD	Df	t-cal.	t-crit	P
	Inquiry	146	43.47	5.219	.527					

Performance						0.811	203	1.271	1.96	0.205
	Task Based	160	44.28	3.865	.374					

Calculated $p > 0.05$, calculated, t calculated < 1.96 at df 203.

Table7 shows p-value of 0.205, higher than 0.05 level of significance and the calculated t-value of 1.271, lower than the 1.96 t-critical which means no significant difference in performance from both the inquiry and Task-based learning. Thus, the null hypothesis accepted and retained.

H02: There is no significant difference in the effect of Inquiry method on students’ performance in rural and urban located in secondary schools in Imo state.

Table 8: ANCOVA Difference in Inquiry performance in rural and urban secondary schools

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	38255.537 ^a	7	5465.077	247.074	.000
Intercept	460802.413	1	460802.413	20832.676	.000
Tests	37993.773	1	37993.773	1717.682	.000
Location	38.803	1	38.803	1.754	.186
Groups	49.098	1	49.098	2.220	.137
Tests * Location	7.797	1	7.797	.352	.553
Tests * Groups	.894	1	.894	.040	.841
Location * Groups	63.179	1	63.179	2.856	.092
Tests * Location * Groups	3.242	1	3.242	.147	.702
Error	8626.493	390	22.119		
Total	508876.000	398			
Corrected Total	46882.030	397			

R Squared = .816 (Adjusted R Squared = .813)

The table above reveals $F=2.856$ and P -value of $.092$ at $.05$ level of significant. This result depicts no significant difference in effects of inquiry method of teaching between students from rural and urban schools. The null hypothesis is retained.

H03: There is no significant difference in the effect of task based method on students' performance in rural and urban located in secondary schools in Imo state

Table 9: ANCOVA statistics difference in the effect of Task based method on students' performance in rural and urban located in secondary schools in Imo state

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	40671.628 ^a	7	5810.233	326.117	.000
Intercept	489865.282	1	489865.282	27495.152	.000
Tests	40505.058	1	40505.058	2273.467	.000
Location	.043	1	.043	.002	.961
Groups	.375	1	.375	.021	.885
Tests * Location	.139	1	.139	.008	.930
Tests * Groups	1.439	1	1.439	.081	.776
Location * Groups	3.854	1	3.854	.216	.642
Tests * Location * Groups	.409	1	.409	.023	.880
Error	7269.101	408	17.816		
Total	539297.000	416			
Corrected Total	47940.728	415			

R Squared = .848 (Adjusted R Squared = .846)

Table 9 above reveals $F=.216$ and P-value of .0642 at .05 level of significant. This result depicts no significant difference in effects of Task-based method of teaching between students from rural and urban schools. The null hypothesis is retained.

Summary of Findings

1. There is no significant differences in performance of students taught Economics using Inquiry and those taught using task-based methods in secondary schools in Imo state with ($t=1.271$, $p=0.205$)
2. There is no significant difference in the effect of Inquiry method on students' performance in rural and urban located in secondary schools in Imo state with ($F=2.856$, P-value of .092)
3. There is no significant difference in the effect of task based method on students' performance in rural and urban located in secondary schools in Imo state with ($F=.216$, P-value of .0642).

Discussion of Findings

The present study reveals no significant differences in performance of students taught Economics using Inquiry and those taught using task-based methods in secondary schools. This finding is in agreement with the findings of Anyaso and Ugo (2012), Edinyong, and Ubi (2012) Hemoandez-Ramas and Faz (2011), Secondly this study found that there is no significant difference in the effect of Inquiry method on students' performance in rural and urban located in secondary schools confirming the findings of Olabode (2010) and Oparah (2011) who had found a similar result. Finally, the study found no significant difference in the effect of task based method on students' performance in rural and urban located in secondary schools. The result agrees with findings Chu (2013), James (2010) and Salaraara (2009) who earlier found a similar result.

Conclusion

In accordance with the findings of this study, the researchers conclude that there is no differences between the effectiveness of Inquiry method and Task-based method of teaching. It was also concluded that Inquiry method is significantly

effective both in rural and urban secondary schools. The researcher equally conclude that the there is no differential effects of Task-based method of teaching on basis of rural or urban location.

Recommendations

On the basis of the findings of the study, the following recommendations were put forward:

1. That the use of both Inquiry and task-based methods of instruction should be widely encouraged without differential preference.
2. Schools in both rural and urban location should learn to apply inquiry teaching method.
3. Educators should not lay differential emphasis between the task-based method in either rural or urban location

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