



EXPERIMENTO REPORT OF THE BASELINE STUDY IN LAGOS STATE PRIMARY SCHOOLS

DECEMBER, 2017

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1. Introduction

Need for a Baseline Study

The Experimento 8+ project is an instructional intervention programme that SIEMENS Stiftung intends to roll out in Nigeria. The overall aim of Experimento is to significantly improve science education in local public schools. It addresses both in-service and pre-service teachers as well as the pupils.

A baseline study is done after a decision to implement a project has been made. It is done as a benchmark for measuring project success and failure. Without a baseline, it is not possible to know the impact of a project. Baseline surveys are an important part of any M&E process. It is also a donor requirement since M&E is integral for any donor to establish future project success. It is based on these premises that a baseline study was undertaken for the EXPERIMENTO project.

2. Purpose of the Study

The purpose of the baseline study was to ascertain the status of primary science teaching in public schools in Lagos State. Specifically the study looked at the following variables

- Teacher characteristics
- School and instructional process
- Use of ICT in teaching
- Support for science teaching

3. Study population

There are 20 Local Government Education Authority (LGEA) under the Lagos State Universal Basic Education Board (SUBEB). In each of the Local Government Education Authority (LGEA) four primary schools was selected by random sampling techniques. The total number of schools selected was eighty. Four schools per LGEA. The list of schools is included as Appendix 1.

4. Instruments for Data Collection

Questionnaires were developed for the Teachers, School Heads and SUBEB officials. In addition a classroom observational schedule was used to record classroom interaction. All the instruments are included as appendices.

5. Method of Data Collection

Each school in the study population was visited twice to distribute the questionnaire to the primary science teachers and the Head teachers. Also classroom observations were carried out to observe primary science teachers teaching science. In each of the local government, SUBEB officials in charge of the science unit were interviewed.

6. Methods of Data Analysis

Descriptive statistics was used to analyze the data collected.

7. Work plan for the baseline study

The study commenced in October and ended in December 2017

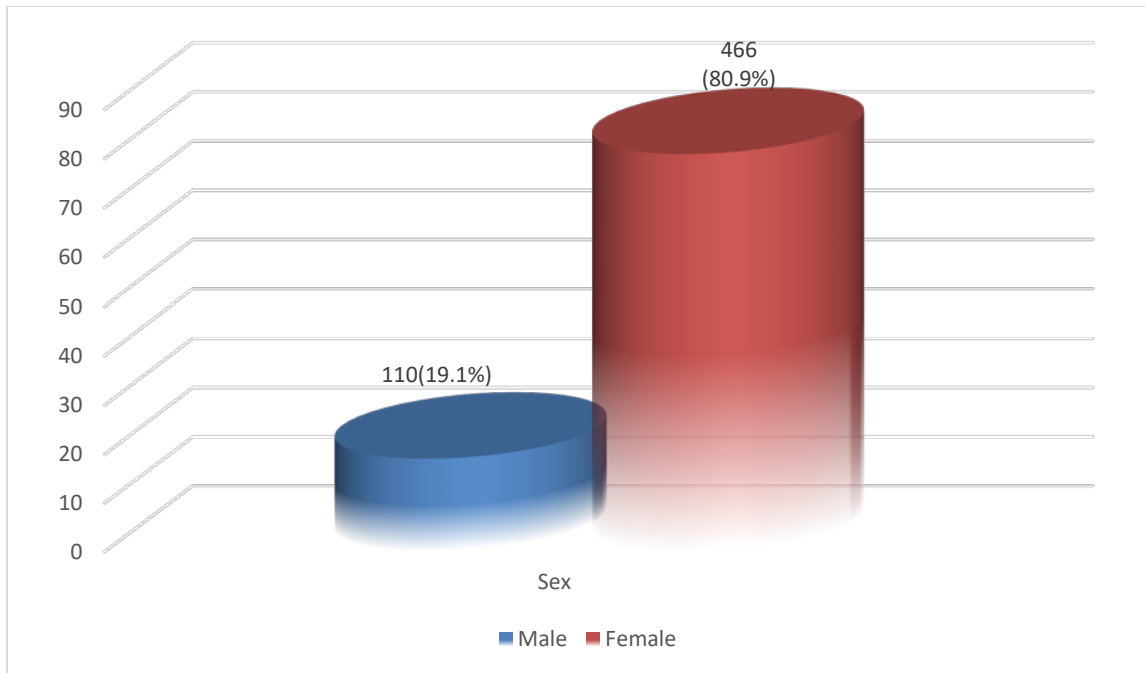
| WORK PLAN | | | |
|--|----------------|-----------------|-----------------|
| ACTIVITY | 2017 | | |
| | October | November | December |
| | Phase 1 | Phase 2 | Phase 3 |
| PHASE 1 | | | |
| Identification of participating School | | | |
| Construction of Research Instruments | | | |
| Production of Research Instruments | | | |
| Training of Research Assistants | | | |
| Pilot testing instrument | | | |
| PHASE 2 | | | |
| Collection of Data | | | |
| Analysis of Data | | | |
| PHASE 3 | | | |
| Production / Presentation of Report | | | |

8. Results and Interpretation

The research study was primarily descriptive

8.1 Demographic Report

Figure 1: Teachers' Distribution based on Sex



Out of the Five hundred and seventy-six (576) teachers from the sampled schools, 110 (19.1%) were male teachers while 466 (80.9%) were female teachers.

Educational Qualification

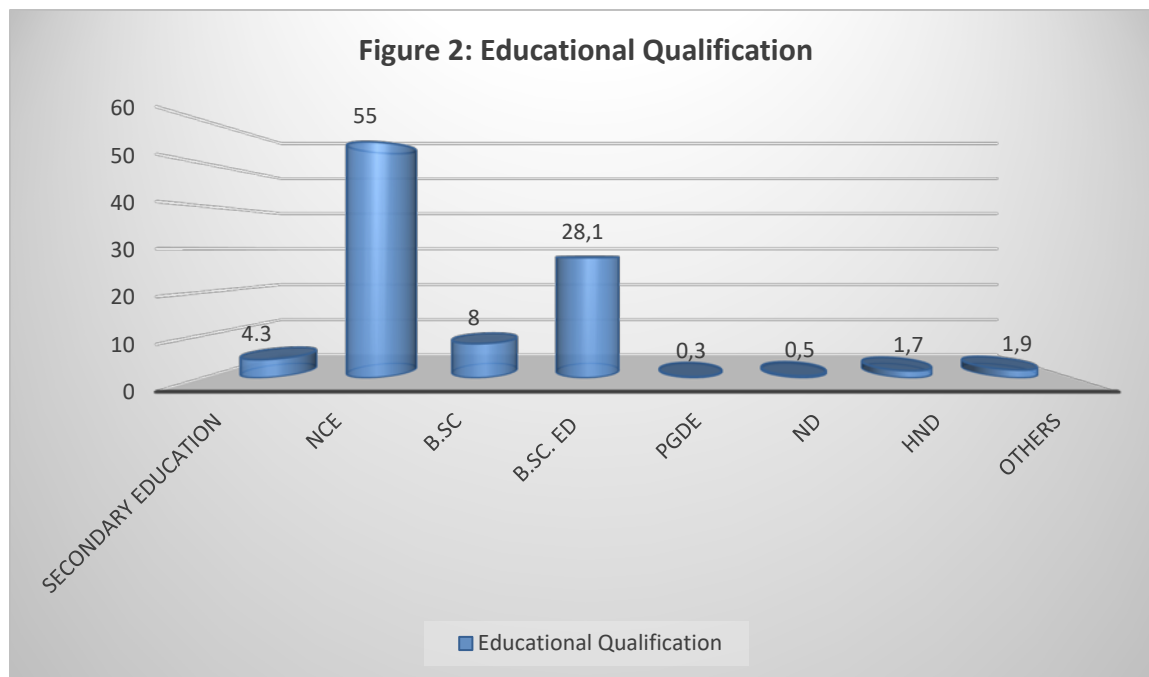
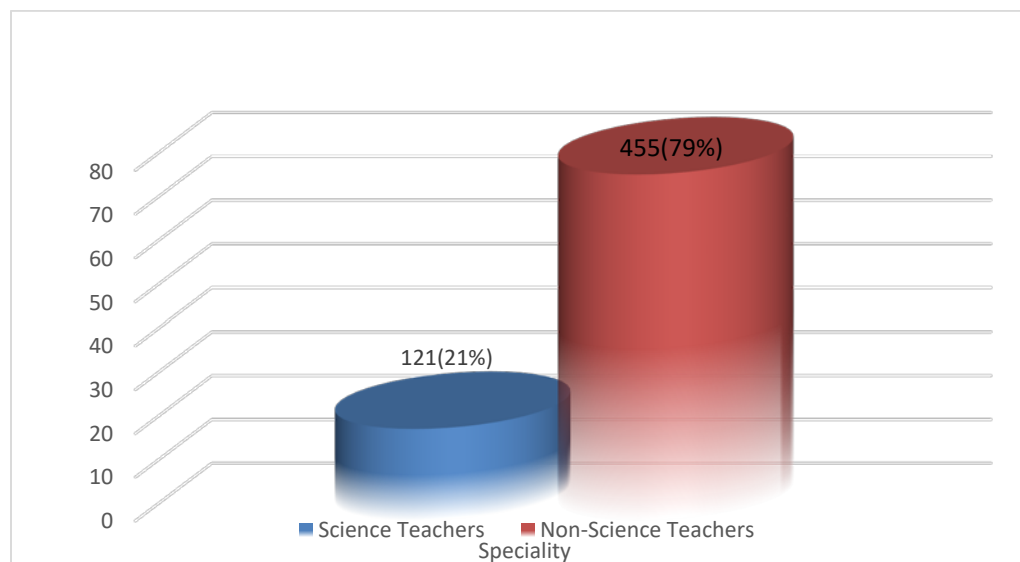


Figure 2 indicates that 4.3% of the surveyed teachers has Senior Secondary School Certificate (SSCE), 55.0% has Nigerian Certificate in Education (N.C.E.), 8.0% has Bachelor of Science (B.Sc.), 28.1% has Bachelor of Science in Education (B.Sc. Ed.), 0.3% has Postgraduate Diploma in Education (PGDE) and National Diploma (ND) respectively, 1.7% has Higher National Diploma (HND) and 1.9% has other relevant certificate.

Teachers' Specialty

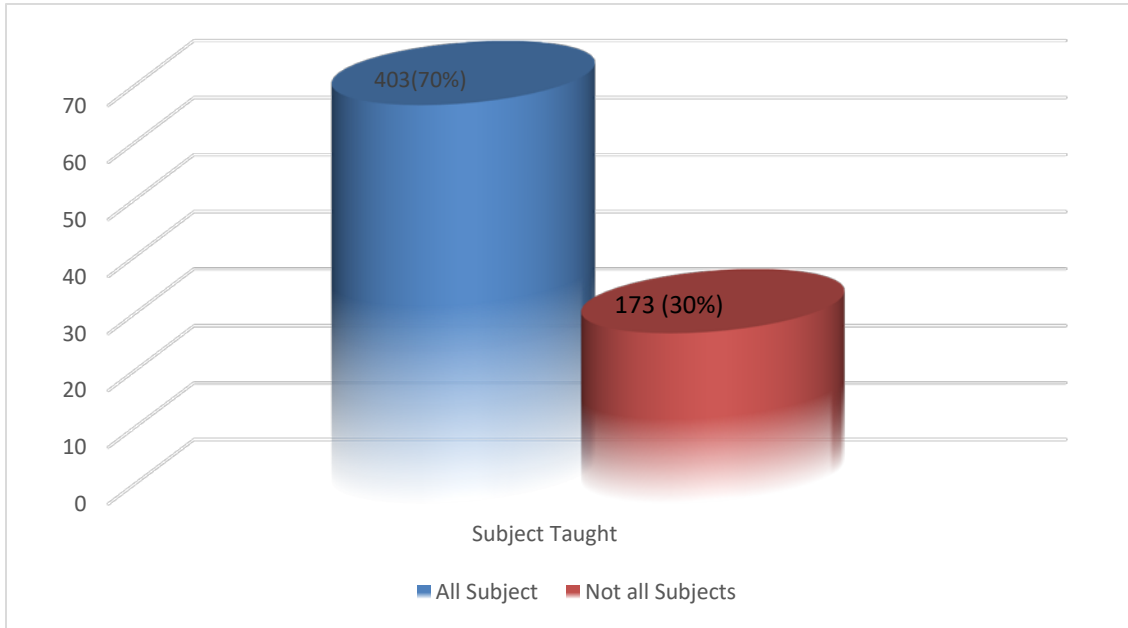
Figure 3: Percentage based on Specialty



From Figure 3, 21.0% of the teachers are science teachers while 79.0% are non- science teachers.

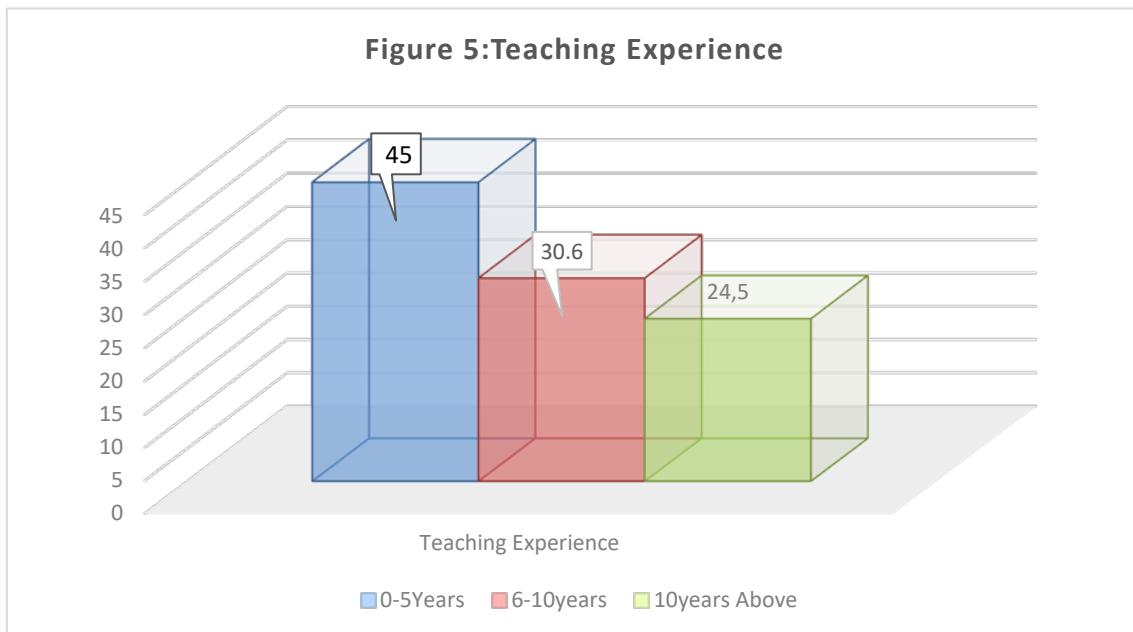
Subject(s) Taught

Figure 4: Analysis based on subject(s) Taught



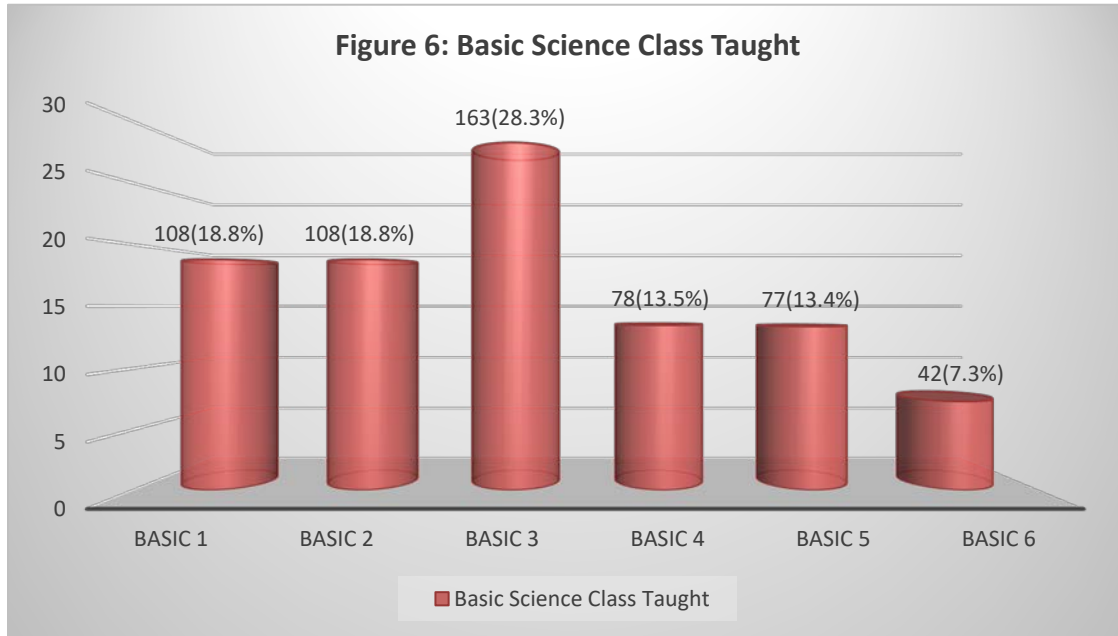
70.0% of the surveyed teachers are teaching all primary school subjects while 30.0% teach based on the area of specialization.

Teaching Experience



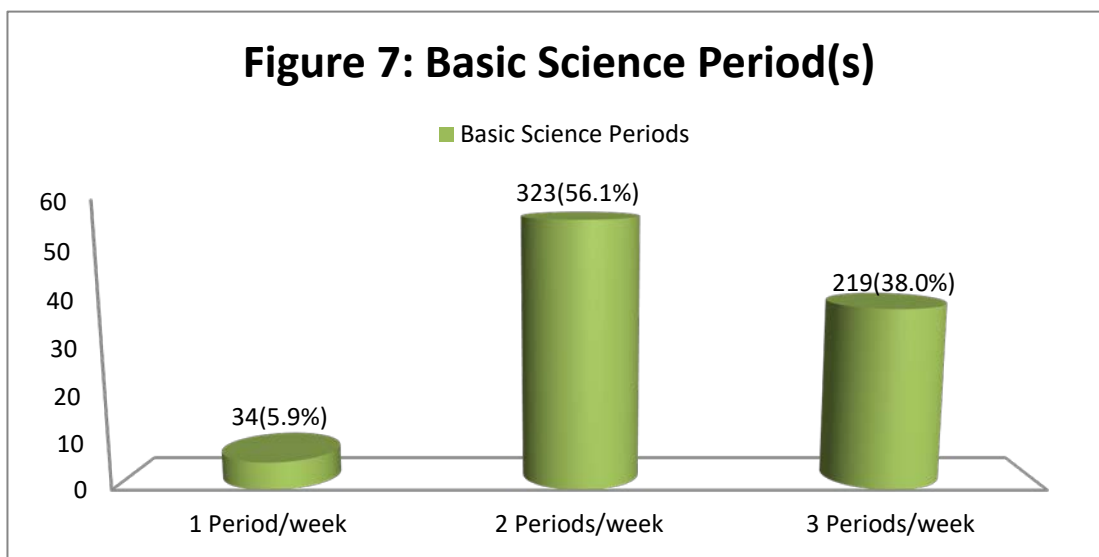
45.0% of the teachers have 0-5 years teaching experience, 30.6% have teaching experience between 6-10 years and 24.5% have 10 years and above teaching experience.

Class Level Taught by the Teachers



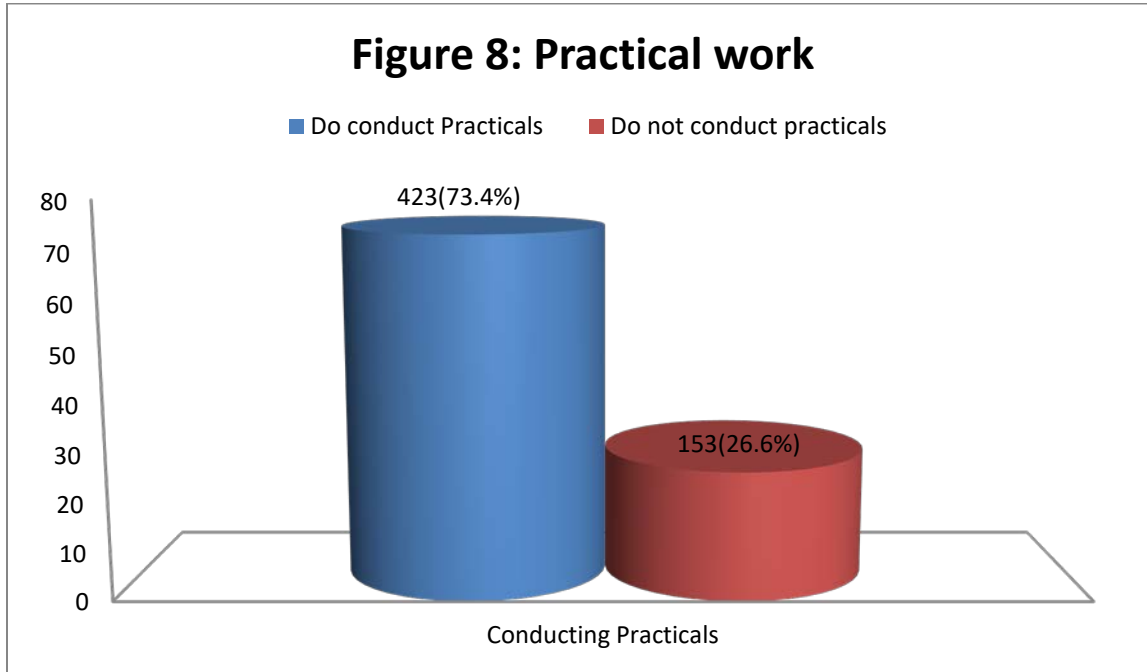
From Figure 6, 18.8% of the respondents are teaching Basic 1 and 2 respectively. 28.3% are teaching Basic 3, 13.5% and 13.4% are teaching Basic 4 and 5 respectively and 7.3% are teaching Basic 6.

Number of Periods for Basic Science



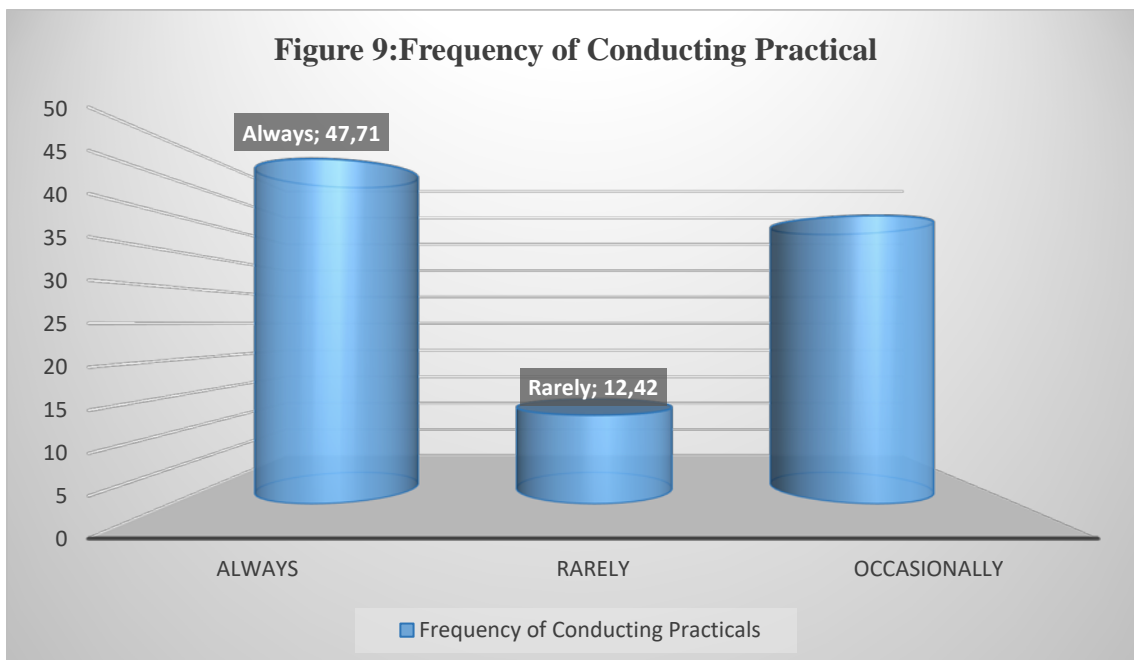
5.9% of the surveyed teachers take a period of Basic science per week, 56.1% take two periods per week while 38.0% take three periods of Basic Science per week.

8.2 Practical Activities



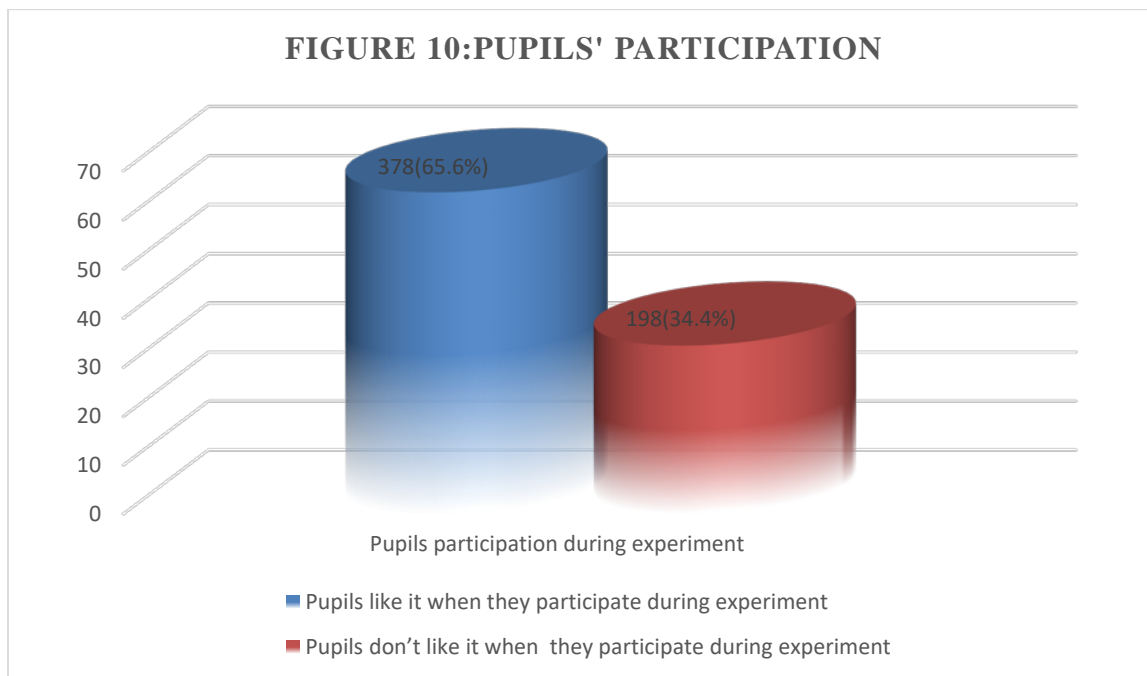
73.4% of the teachers claimed to be conducting practical when teaching Basic Science while 26.6% do not conduct practical when teaching Basic Science.

8.2.1 Frequency of Practical Work



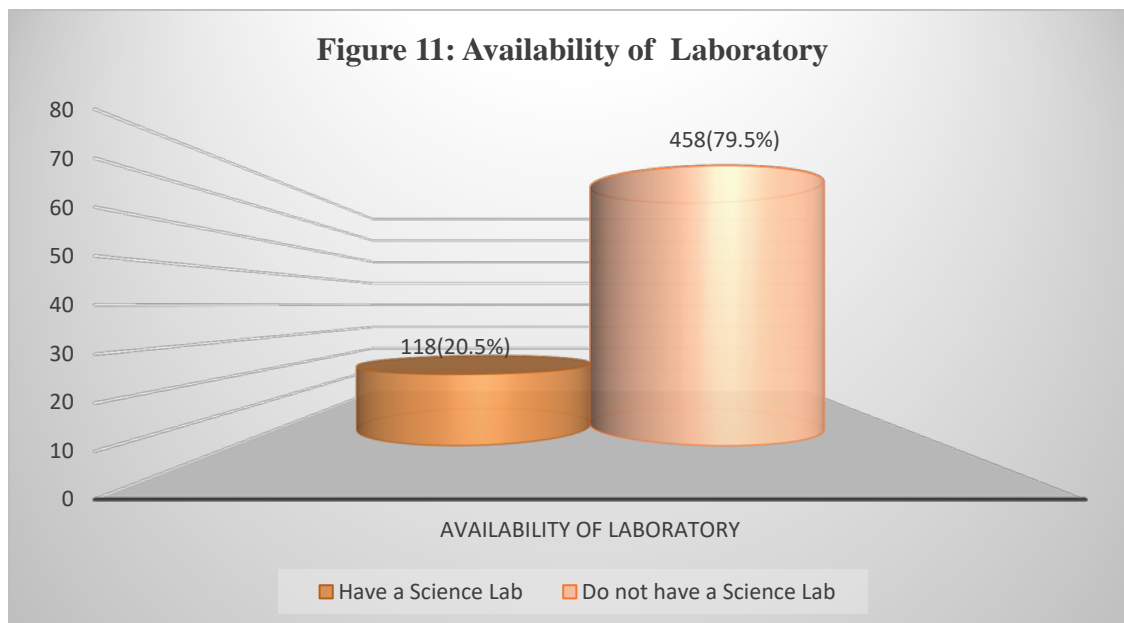
Out of the 153 teachers who claimed to be conducting practicals, 47.71% always conduct practical when teaching Basic Science, 12.42% rarely conduct practical and 39.87% occasionally conduct practical when teaching Basic Science.

8.3. Pupils' Participation in Experiment

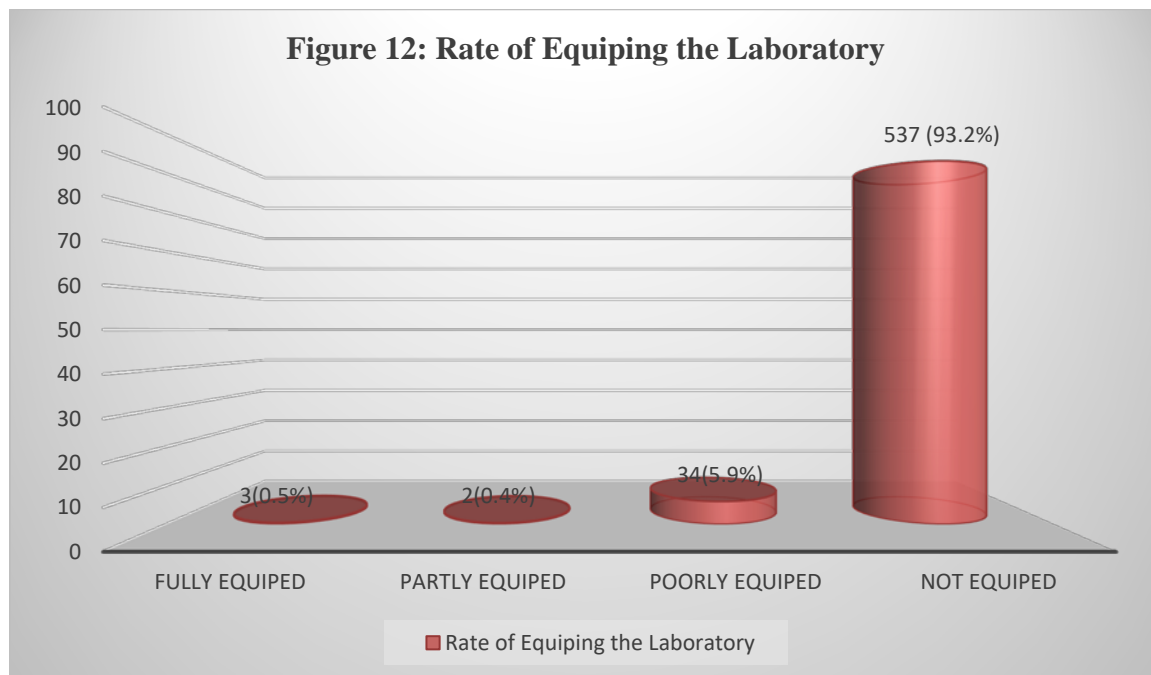


65.6% of the teachers claimed that their pupils like experiments when they participate while 34.4% reported that their pupils do not like experiments when they participate.

8.4. Availability of Laboratory

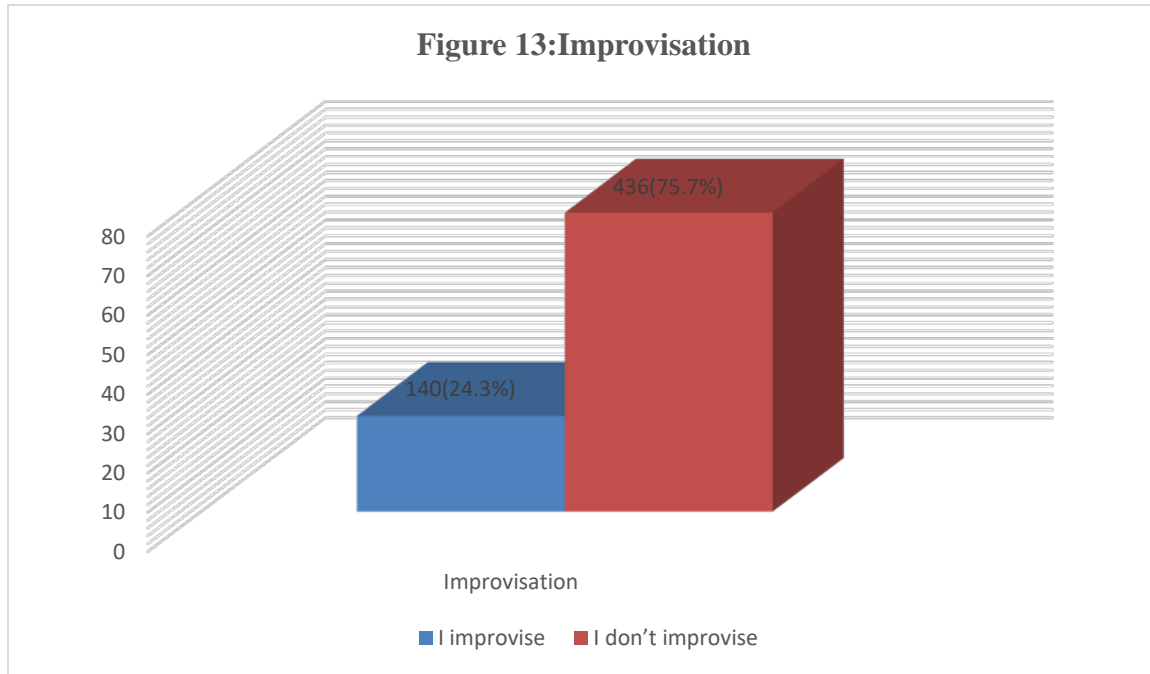


20.5% of the surveyed teachers claimed that they have a science laboratory in their school while 79.5% reported non-availability of a science laboratory in their school.

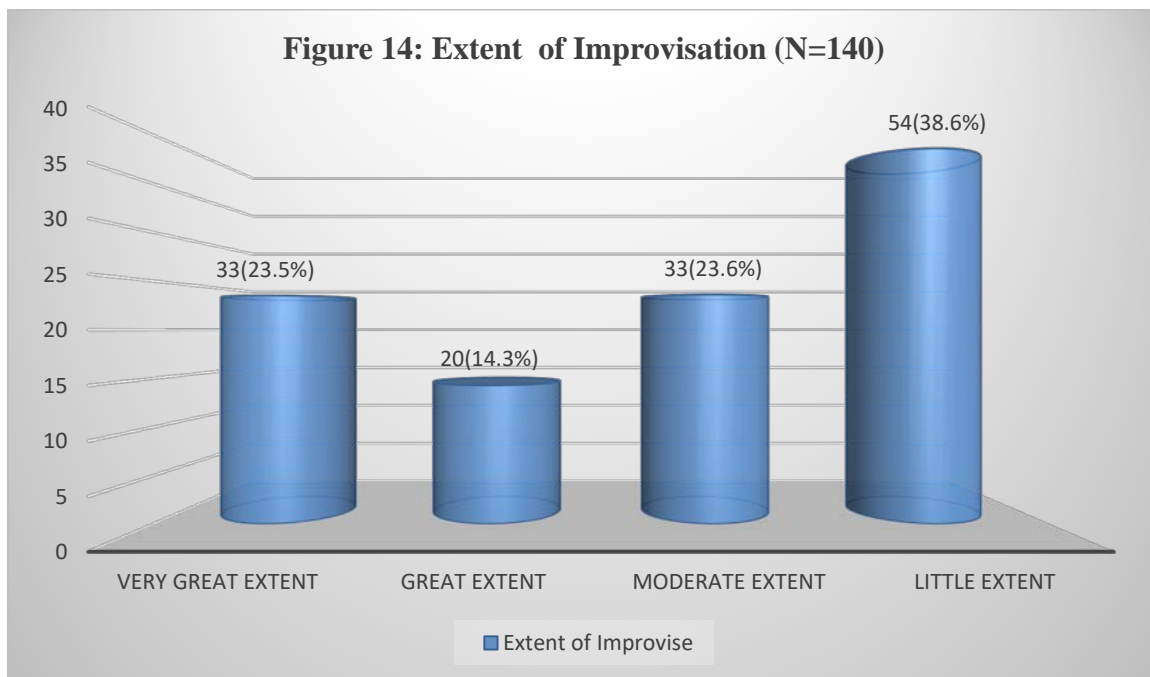


Only 0.5% of the teachers reported to have a fully equipped laboratory, 0.4% of the teachers are having a partially equipped laboratory, 5.9% of the teachers are having a poorly equipped laboratory and 93.2% of the teachers are having laboratory that are not equipped which amounts to not having a laboratory in the school.

8.5. Improvisation



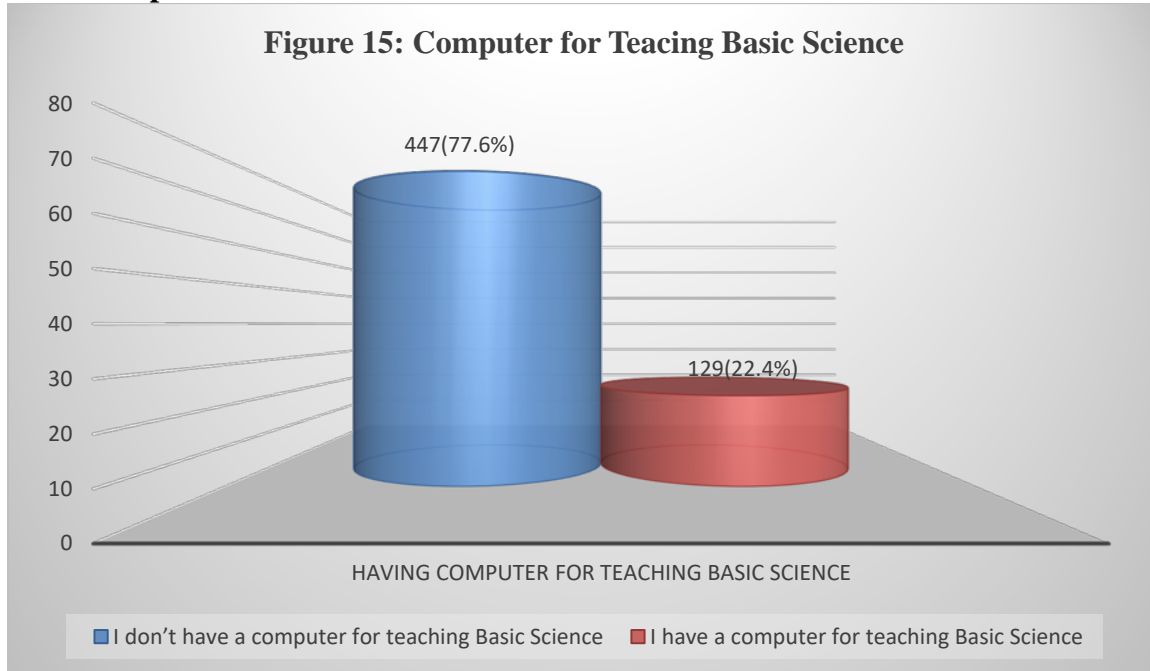
Only 24.3% of the surveyed teachers improvise when the required materials are not available while 75.7% do not improvise.



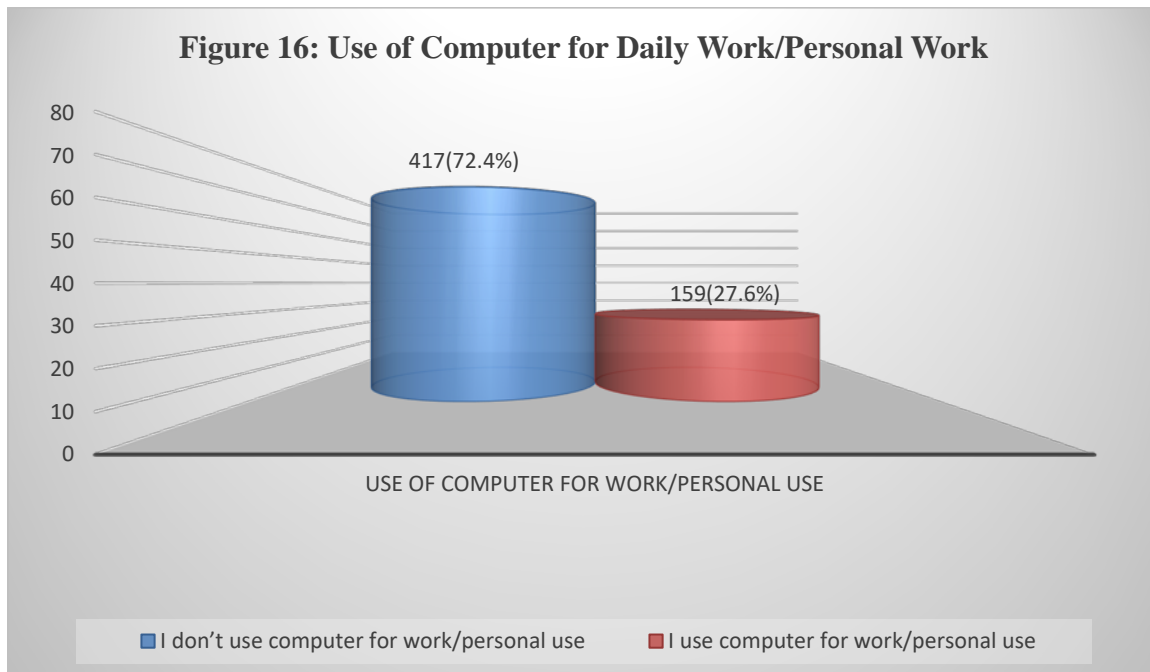
Out of the 140 who improvise, 23.5% improvise to a very great extent, 14.3% improvise to a great extent, and 23.6% improvise to a moderate extent while 38.6% improvise to a little extent.

8.6. Information and Communication Technology

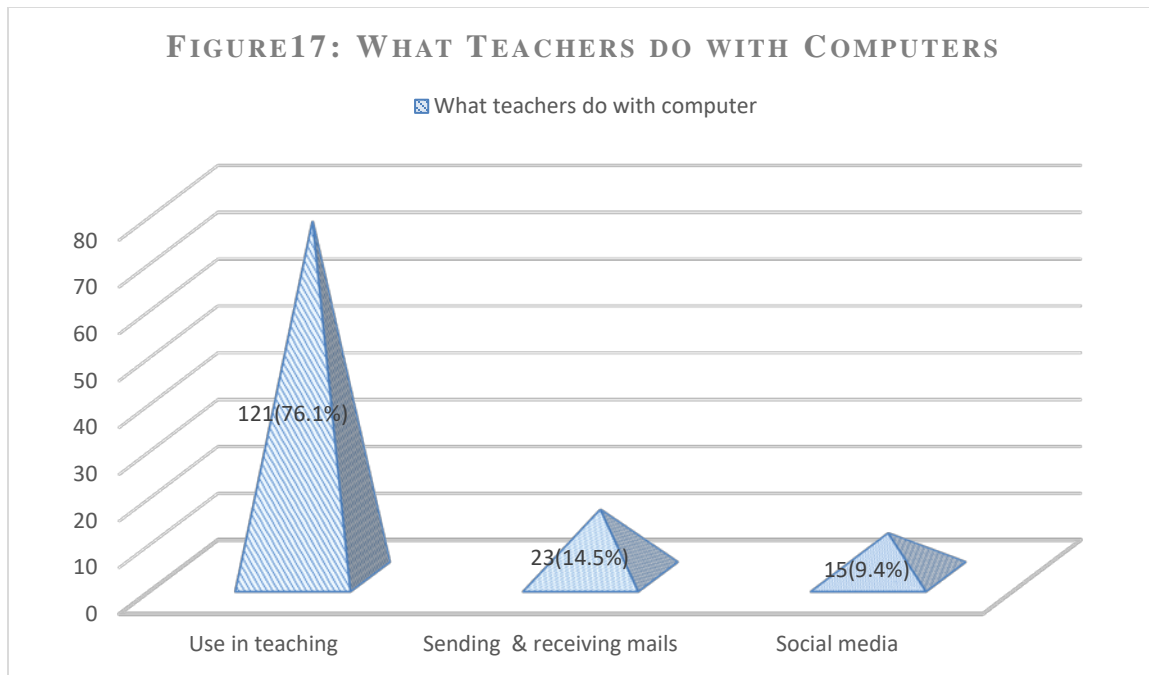
8.6.1. Computer



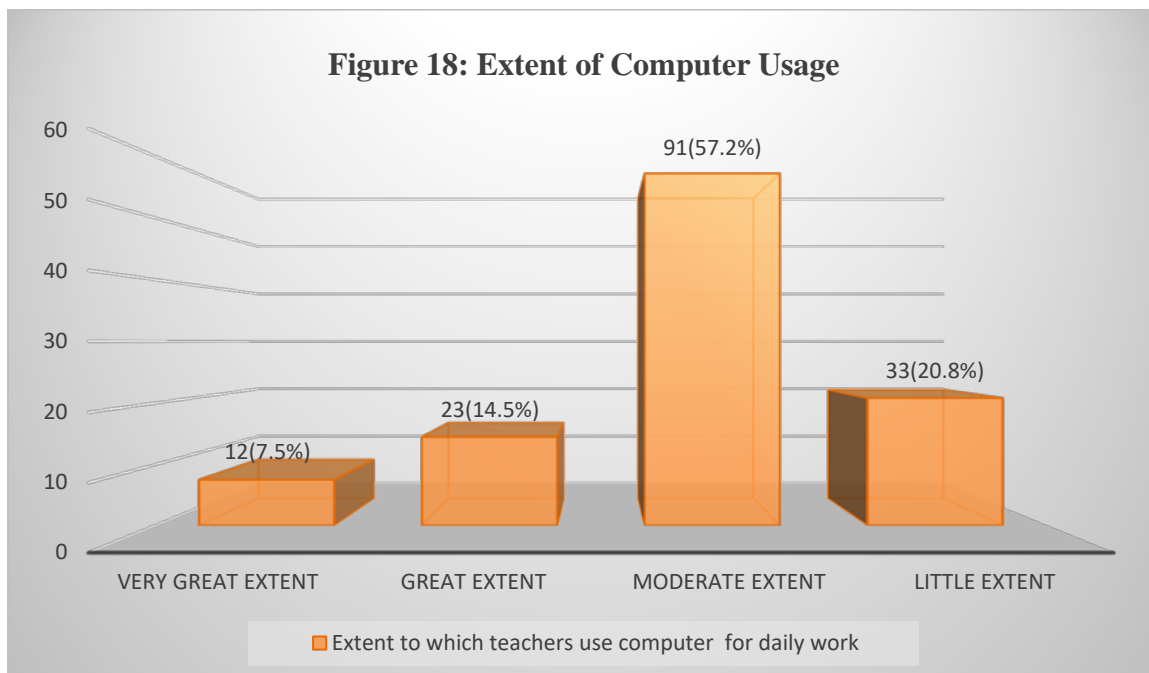
22.4% of the surveyed teachers said they are having a computer for teaching while 77.6% said they are not having computer in their schools.



Out of the Five hundred and seventy-six (576) teachers sampled, 159 (27.6%) said they are using computer for their daily work or personal work while 417 (72.6%) said they do not use computer for their daily work or personal work.

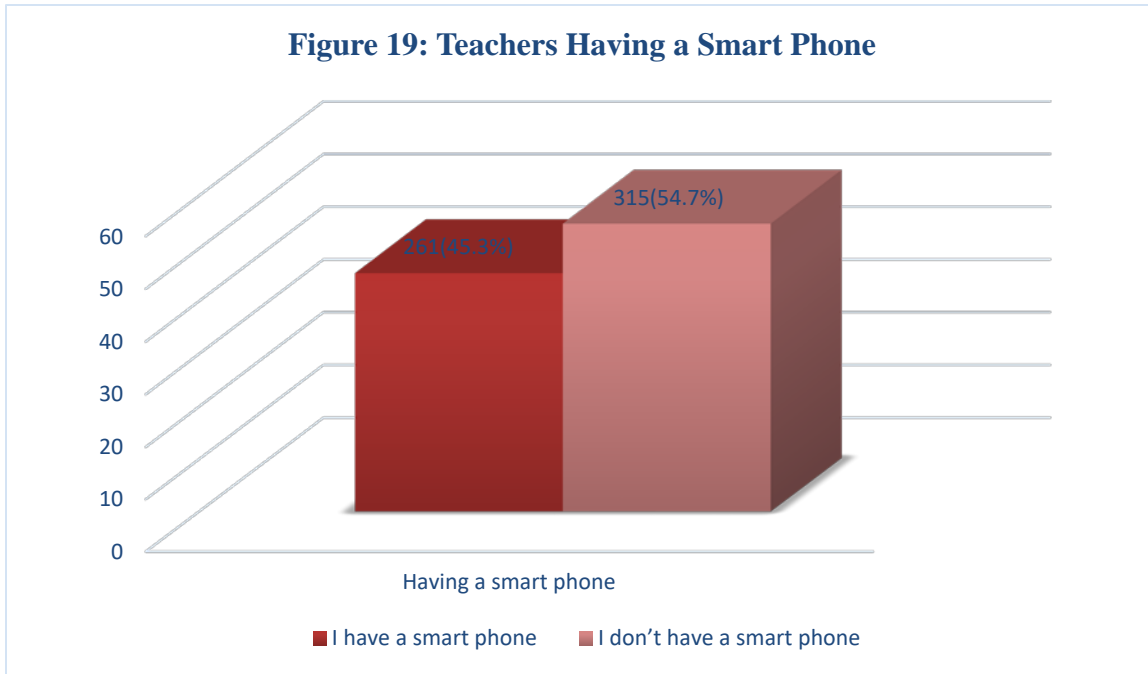


Out of 159 that are using the computer for their daily activities, 76.1% said they use the computer for teaching, 14.5% said they computer for sending and receiving mails and 9.4% said they use the computer for social media activities.



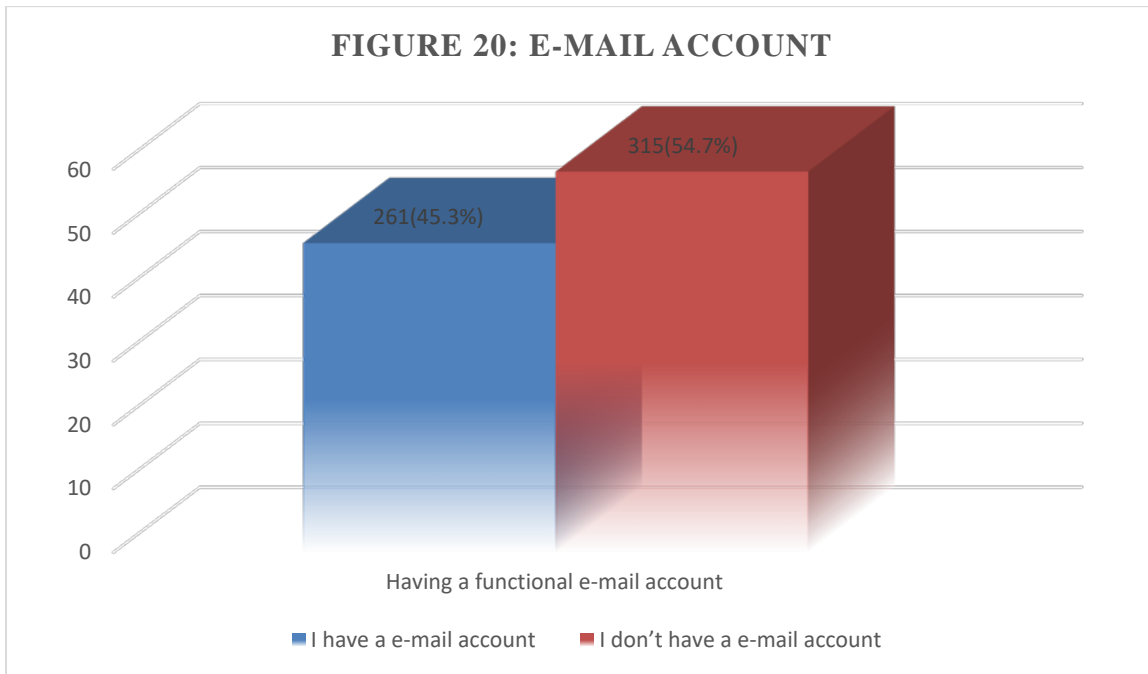
Out of the 159 that are using the computer for their daily activities, 7.5% use the computer to a very great extent, 14.5% use the computer to a great extent, and 57.2% use the computer to a moderate extent while 20.8% use the computer to a little extent.

8.6.2. Use of Smart Phone



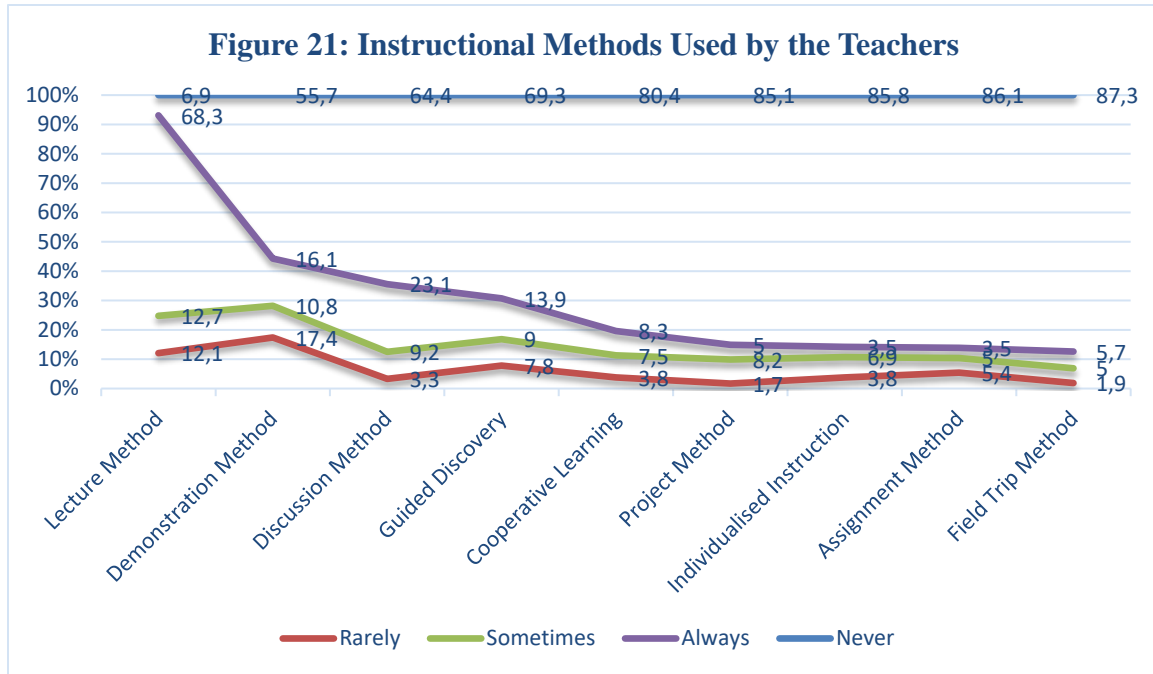
45.3% of the participants have a smart phone while 54.7% they do not have a smart phone.

8.6.3. E-Mail Account



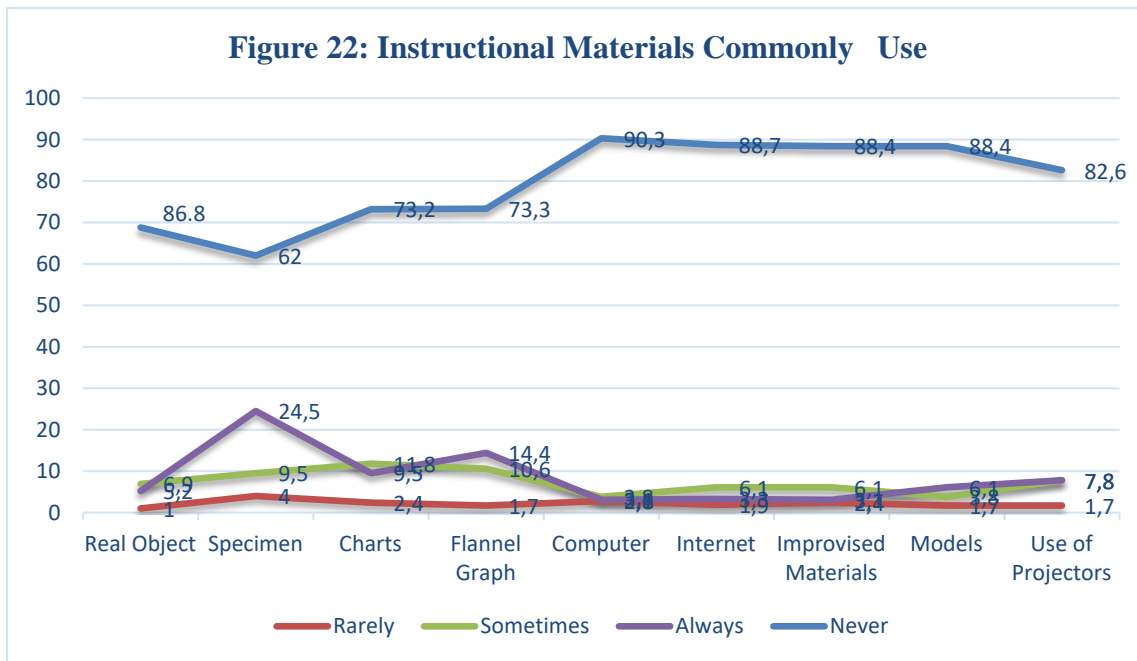
From Figure 17, 48.4% of the participants have a functional e-mail while 51.6% have no functional e-mail.

8.7. Instructional Methods



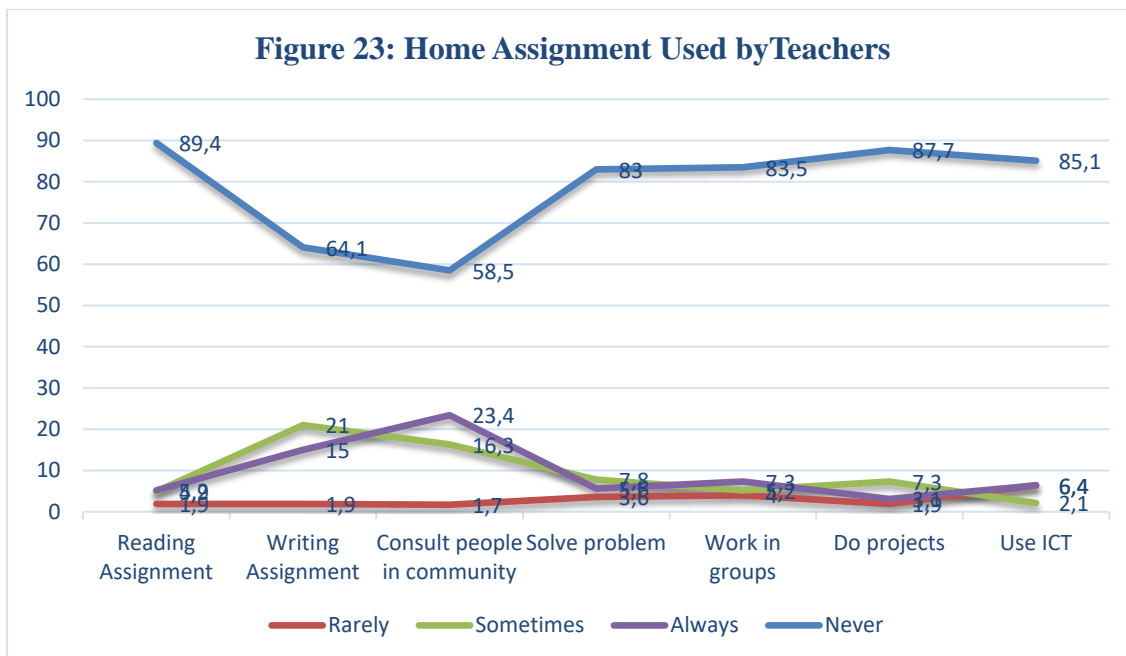
6.9% of the participants never use lecture method, 12.1% rarely used lecture method, 12.7% sometimes use lecture method and 68.3% always use lecture method for teaching. Unfortunately, 55.7% never used demonstration method, 64.4% never used discussion method, 69.3% never used guided discovery method, 80.4% never used cooperative learning method, 85.1% never used project method, 85.8% never used individualized instruction method, 86.1% never used assignment method, and 87.3% never used field trip method.

8.8. Instructional Materials



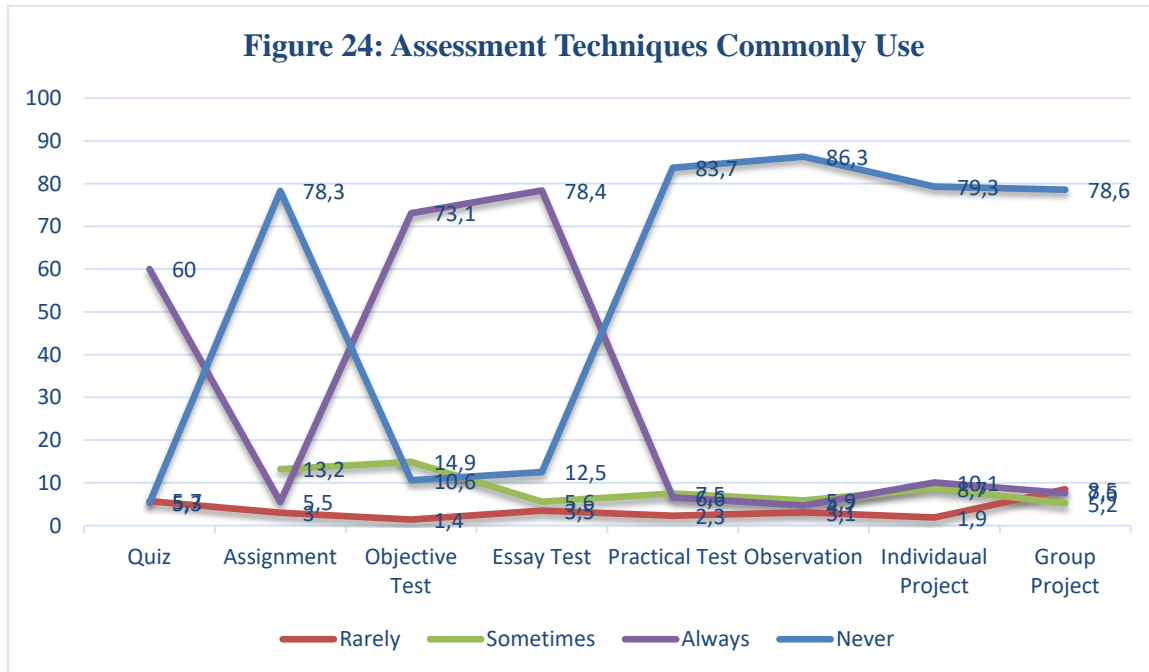
From Figure 22, 86.8% never used real object for teaching Basic Science, 62.0% never used specimen, 73.2% never used charts, 73.3% never used flannel graph, 90.3% never used computer, 88.7% never used internet, 88.4% never used improvised materials, 88.4% never used models , 82.6% never used projectors.

8.9. Home Assignment



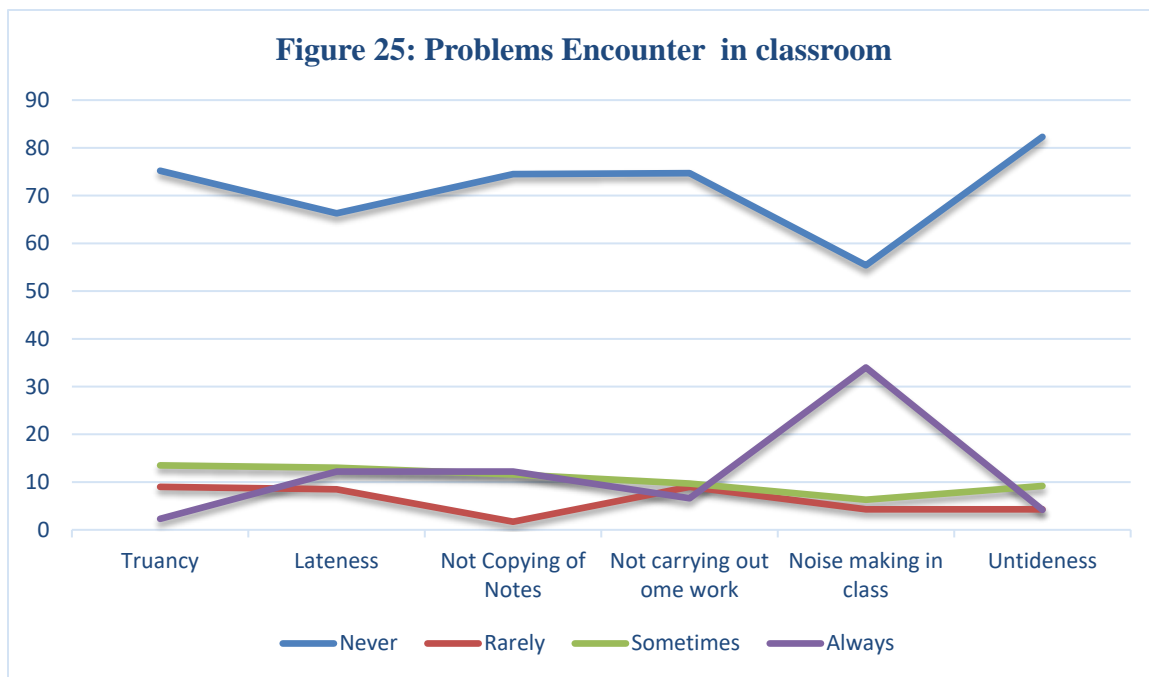
89.4% of the teachers never used assignment, 64.10% of the teachers never used writing assignment, 83.5% of the teachers never give homework requiring students to consult people in the community, 83.0% of the teachers never give homework requiring students to solve problem, 83.5% of the teachers never give homework requiring students work in group, 87.7% of the teachers never give homework requiring students to do project and 85.1% of the teachers never give homework requiring students to use ICT.

8.10. Assessment Techniques Commonly Use by Teachers

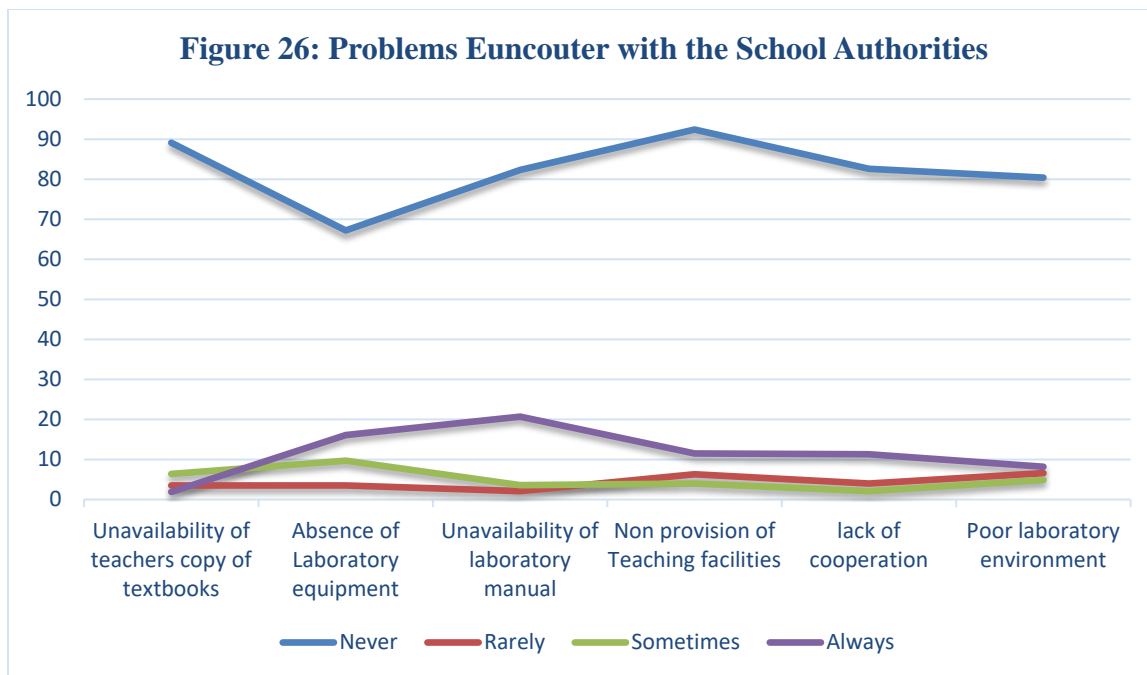


From figure 24, 60.0% of the surveyed teachers always use quiz for assessment, 73.1% always use objective test for assessment and 78.4% always use essay test for assessment. While 73.3% never use assignment for assessment, 83.7% never use practical test for assessment, 86.3% never use observation for assessment, 79.3% never use individual project for assessment, and 78.6% never use group project for assessment.

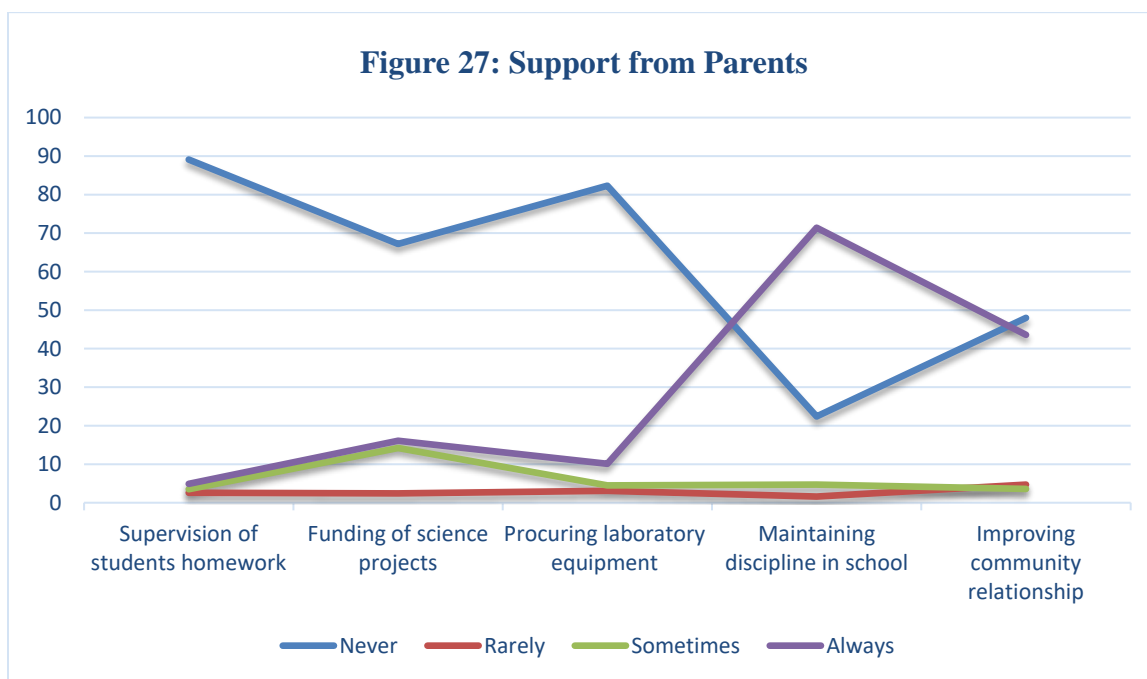
8.11. Problems Encounter in Teaching Basic Science



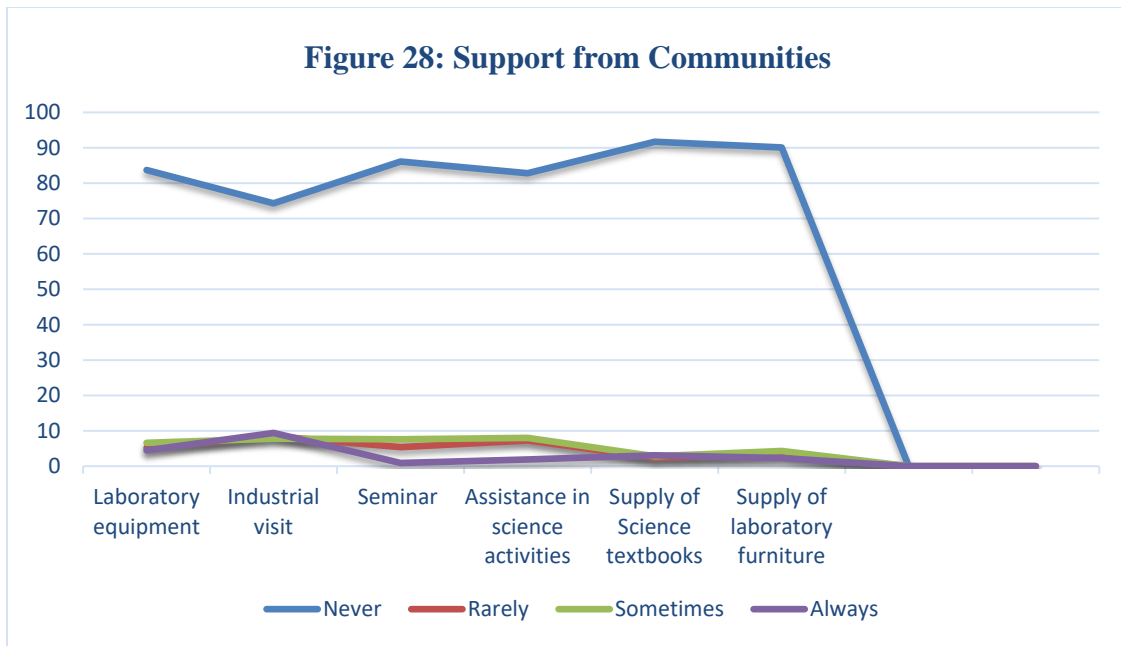
On common problems that teachers use to encounter in classroom, 75.2% claimed that they never encounter truancy, 66.3% never encounter lateness, 74.5% never encounter the problem of not coping notes, 74.7% never encounter the problem of not carrying out home work, 55.4% never encounter the problem of noise making and 82.3% never encounter the problem of untidiness.



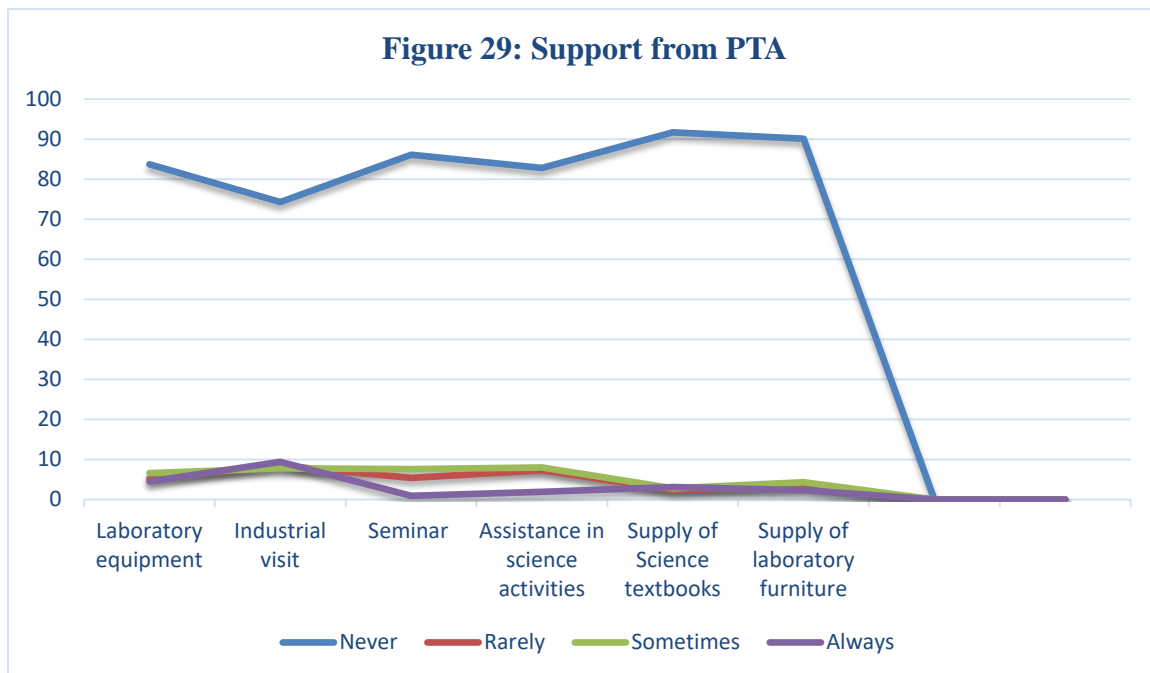
8.12. Supports



Surveyed teachers' response on support they get from parents indicates that 89.1% never get support on supervision of students' home-work, 67.2% never get support on funding of science projects, 82.3% never get support on procurement of laboratory equipment but 71.4% always get support from parents on maintaining discipline in schools. Almost half (48.0%) of the teachers never get support on improving community relationship while 43.6% always get support from parents on improving community relationship.

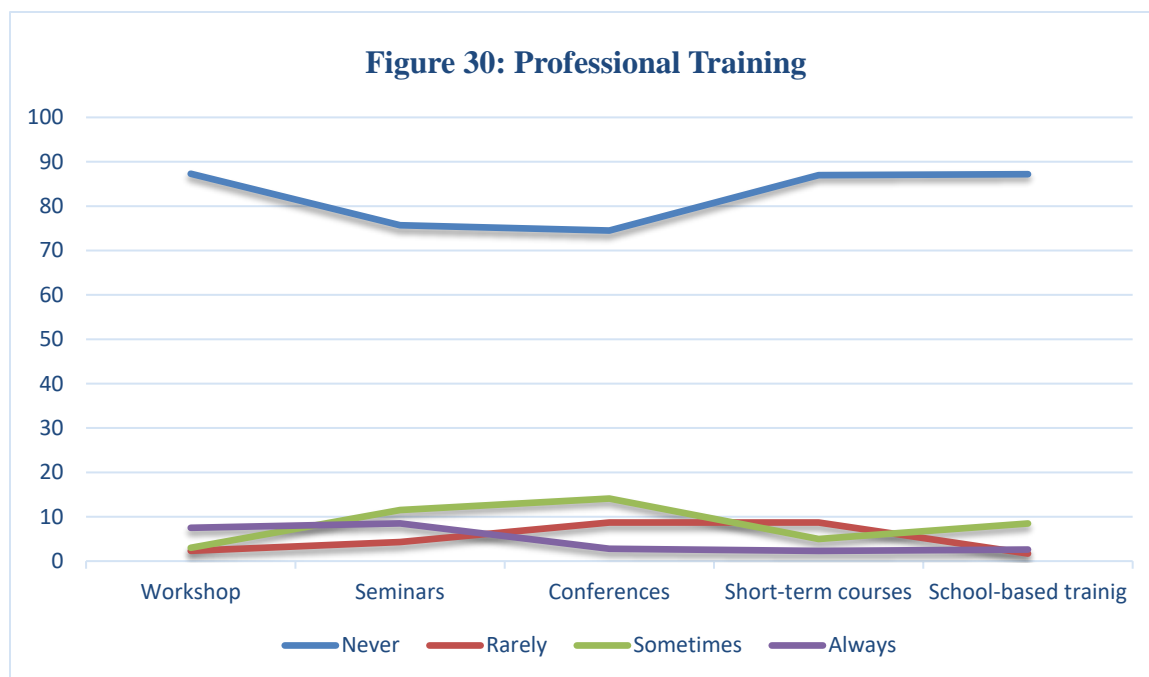


From figure 28, 83.7% of the participants never get support from community on supply of laboratory equipment, 74.3% never get support on visit of students to industries/ factories, 86.1% never get support on organization of seminars for students, 82.8% never get support on assistance on science activities, 91.7% never get support on supply of science textbooks and 90.1% of teachers never get support on assistance on supply of laboratory furniture.



92.4% of the participants never benefits from the Parent Teachers Association (PTA) on supply of laboratory furniture, 80.2% never receive assistance on employment of Basic Science teachers, 82.6% never get support on procurement of laboratory facilities, 93.2% never support on supply of science textbooks, and 87.2% never get support on supply of science magazine.

8. 13. Professional Training



On the form of professional training the surveyed teachers have received, 87.3% indicated that they never attended any workshop, 75.7% never benefitted from any seminar, 74.5% never benefitted from any conference, 87% never benefitted from short-term courses and 87.2% never had any school-based training support.

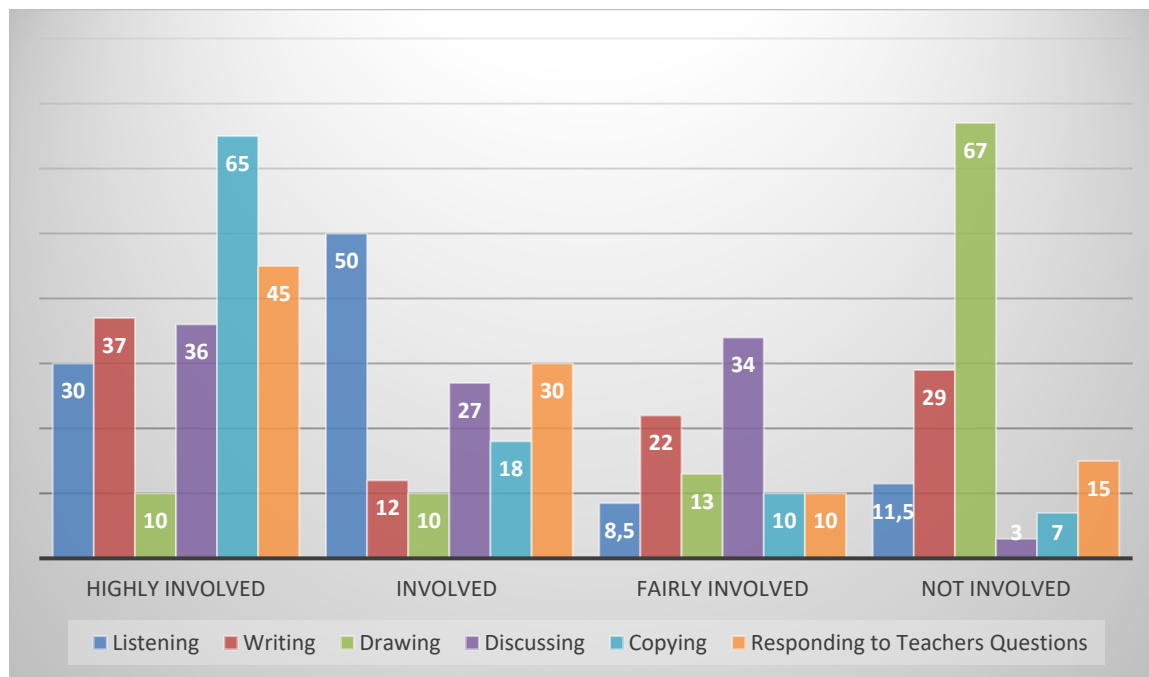
8.14. Observation

All the schools involved in the study are having an average of 40 pupils in the classroom. From Head Teachers' report, 87% of the schools observed do not have laboratory, 92% do not have Information and Communication Technology tools for teaching and learning. 98.1% of the schools use prints (textbooks) and charts for the teaching of Basic Science. The school only support the teachers with the provision of charts and the textbooks where and when necessary. 97.2% of the schools are not participating in science competition. 82% of the school heads indicated that the performance of the pupils for the past five years have been satisfactory and also claimed that the parents, community and corporate organization like CEDAR, Coca Cola, and Access Bank Plc have been of support to their schools.

The findings also reveal that interviewed SUBEB Chairs claimed that they supply the schools with relevant instructional resources for the teaching of science. Such instructional resources include textbooks, charts and real objects. This is assumed to be done yearly for the schools at the beginning of the academic session. They also send the teachers to seminars and trainings that are related to the teaching of science. In terms of the support given to teachers, since most of their teachers are NCE holders, they allow them to further their education through sandwich programmes in Nigeria Universities.

A total of 85 teachers were also observed in the classroom by the researchers and pupils' activities such as listening, note copying, writing, discussing, investigating, drawing, etc. were observed during the instructional process. The class activities were classified based on the level at which pupils were involved ranging from 'highly involved' to 'not involved' as show in Figure 31.

Figure 31: Classroom Observation



For listening, 30% of the pupils in the classroom were highly involved in listening while 50% were involved (see Figure 1). 37% was highly involved in writing. For drawing, 10% of the pupils are highly involved and involved respectively while 67% are not involved. 36% of the pupils were highly involved in drawing and 27% was involved. 65% of the pupils were highly involved in note copying in the classroom and 18% were involved. It was also revealed that 45% were highly involved in responding to teacher's questions.

9. Summary of Findings

This section summarized the findings of the study.

- **Demographic Information**

The study showed that there are more female teachers teaching in primary schools than the male teachers. On the issue of educational qualification, majority of the teachers hold the Nigerian Certificate in Education (NCE). This is laudable since this became the minimum qualification to teach at the primary school level in Nigeria almost a decade ago. Unfortunately, majority of the teachers are not science subject specialists but teach

all subjects on the time table in their classes. Interestingly, majority of them have over five years teaching experience and handle Basic 3 and above classes with average of two (2) periods per week.

- **Practical Activities**

The study found that majority of the surveyed teachers (73.4%) claimed to be conducting practical activities during basic science class. However, over half of them indicated that they do not conduct practicals on a regular basis during teaching/learning process (see Figure 9).

- **Pupils' Participation**

The finding indicated that over half of the teachers believed that pupils' like participating in basic science learning activities but unfortunately only few of the teachers (27.6%) use practical activities during Basic Science classes (see Figure 9).

- **Laboratory**

Majority of the teachers (79.5%) indicated non availability of laboratory and those who indicated availability of laboratory also reported that the laboratory was not well equipped.

- **Improvisation**

The researchers found that majority of the participants never improvised for the purpose of teaching Basic Science and few (24.3%) who claimed to improvise only 37.8% improvise to a great extent. This finding further established why there are no regular practical activities in Basic Science classes (see Figures 9 & 13)

- **Information Communication Technology Usage**

Most of the sampled schools have no computer for the teaching of Basic Science (see Figure 14). Only 27.4% of the surveyed teachers use computer for daily /personal work. Majority (76.1%) of them claimed to be using it for teaching while the rest use it for email and social media purposes (see Figure 16). The same percentage (54.7%) of the respondents indicated that they do not have an e-mail account and smart phone respectively. (see Figures 18 & 19). This implied that only those who have smart phone (45.3%) also have functional e-mail (45.3%)

- **Teaching Methods Commonly used by Teachers**

Overall, the study indicated that the most common teaching method used by teachers was lecture method (see Figure 21). Although, most of the teachers (73.4%) claimed to be conducting practical during Basic Science lesson (see Fig. 7) but majority of them (57.9)% are still using Lecture Method to teach the subject and this negates their claim. Clearly there is an emphasis on teaching the curriculum content in Nigeria and most

teachers use lecture method because of time constraints, lack of teacher training in alternative methods, poor guidelines and emphasis on academic achievement and examinations.

- **Instructional Materials**

Virtually all the teachers never use any kind of instructional material during the instructional process. Little wonder most of them rarely or never conduct practicals for their pupils (see Fig.22). Non availability of laboratory (79.5%, see Figure 9) and lack of improvisation (see Fig. 13) further established the reason why teachers never conduct practicals or use instructional materials.

- **Home Assignment**

The researchers also found out that most teachers never give any form of home assignment to pupils.

- **Assessment Methods**

The study found out that teachers are often only focused on academic achievement, measured through traditional assessment techniques i.e. tests and examination on content since the Nigerian educational system still place a high value on academic achievement. The majority are using objective (63.5%) or essay (82.5%) test to assess their pupils.

- **Problem Encounter in Teaching Basic Science**

Majority of the teachers claimed they never encounter any serious problem in teaching Basic Science based on the following indices: Truancy, lateness, not copying of notes, not carrying out home work, noise making in class and untidiness. This finding also implies that pupils are highly disciplined. Specifically, home work would not be a problem since the teachers do not give home assignment. The researchers also found out that the teachers have no problem with the school authority regarding stationery/text books; cooperation, teaching facilities and laboratory related issues since laboratory is not available in most of the primary school under study (see Figure 9)

- **Support**

This study found that the kind of support for the teaching and learning of basic science expected from stakeholders such as school authority, parents, community and PTA are those related to provision of textual materials, laboratory, funding of project, discipline and community relationship. The study revealed that the teachers only get support from the parent in the area of pupils' discipline (see Figure 25).

- **Professional Training**
Majority of the surveyed teachers were of the opinion that training is not readily available to them. The findings revealed that no form of training is given to them either within the school or outside the school.
- **Observation**
Most of the activities in the classroom involve the teacher talking and writing on the board while the pupils are listening and copying of information from the board.

10. Conclusion

Based on the results of this study it can be concluded that (1) there are no laboratory or equipment / materials to teach primary science; (2) The teachers were not trained to use inquiry method of teaching; (3) The science being taught at the primary science level is predominantly by lecture method with no hands – on activity by the pupils. This in effect is the gap that Experimento will fill.

11. Monitoring and Evaluation

The following indicators will be used as a benchmark for measuring EXPERIMENTO program outputs. Three types of indicators will be measured.

i. Process indicators

- No of teachers trained to use discovery teaching methods.
- No of schools equipped to implement the EXPERIMENTO pedagogy.
- % of class time used on hands – on – activities.
- Quality of classroom interaction.

ii. Outcome indicators

- % of teachers using discovery teaching methods
- % of pupils engaging in hands – on – activities during the instructional process.

iii. Impact indicators

- Improvement in learning outcomes over a period of time.
- No of pupils indicating interest in studying science at the secondary school level and pursuing a STEM career.
- Improvement in the overall quality of science education in Nigeria.

APPENDIX 1 – LIST OF SCHOOLS FOR THE BASELINE STUDY

| LGA | SCHOOLS |
|------------------|---|
| Agege | <ol style="list-style-type: none"> 1. Issa Williams Pry School, Adebisi Awosoga Str. Off Oniwaya Rd. 2. Jibril Martins Pry School, Awosoga Str., Oniwaya Rd. 3. District Pry. School, Oniwaya Road, Agege. 4. Ifeoluwa Pry School, Sebiotimo Str, Mangoro, Agege |
| Ajeromi/Ifelodun | <ol style="list-style-type: none"> 1. Alakoto Pry School Alakoto, 11, Isikalu Str, Olodi Apapa. 2. Anglican Pry School Araromi, 11, Yaya Crescent Olodi Apapa. 3. Asubiojo Pry School I, Off Badagry Express Way, Orile-Iganmu 4. Christ The King Pry School, 88A, Orodu Str, Ajegunle |
| Alimosho | <ol style="list-style-type: none"> 1. Abati Nur/Pry School Akowonjo, 1, Abati Close, off Sasa Road, Akowonjo. 2. African Church Pry school Akowonjo, 20/22, Alhaja Adetutu Str, Akowonjo. 3. Egbeda Pry School, 9, Alhaji Rasaan Street, Egbeda. 4. Alimosho Pry School, 6/8 Iperu-Akesan Str, Alaguntan B/Stop. |
| Amuwo-Odofin | <ol style="list-style-type: none"> 1. 4th Ave. Pry School, 401 Road, 4th Avenue, Festac. 2. 512 Rad Nur/Pry School, 401 Rad Festac Town. 3. Progressive Pry School, Between (R&S) Close, 7th Ave. Festac 4. U.P.E. Pry School, Festac, Between H & K Close, 3rd Avenue, Festac. |
| Apapa | <ol style="list-style-type: none"> 1. Anglican Pry School, Apapa. 120 Kayode Str, Marine Beach, Apapa. 2. St. Theresa's Catholic Nur/Pry School, 1, Bonny Road, Marine-Beach, Apapa. 3. Army Children Pry School, Ashanti Barracks, Mobil Road, Apapa. 4. Methodist Pry School. Apapa, 32/34, Randle Road, Apapa. |
| Badagry | <ol style="list-style-type: none"> 1. Army Children Pry School, Ibereko. 242 Recce Bragade, Ibereko, Badagry. 2. Local Auth. Pry School, Ibereko. Lagos Badagry Expressway, Ibereko. 3. Gbenopo Pry School, Ajara. Tande Street, Ajara-Topa, Badagry. 4. Local Auth. Pry School, Mowo. Moshalashi Rd, Mowo, Badagry. |
| Epe | <ol style="list-style-type: none"> 1. Army Barracks Pry School, Epe. Lasu, Oke-Oyinbo, Epe. 2. Army Children Pry School Lasu-Epe. Lasu, Oke-Oyinbo, Epe. 3. Anglican Pry School Ebute-Afuye, Oluwo Road Epe. 4. Ansar-Ud-Deen Pry School Epe, Alawaye Str. Epe. |
| Eti-Osa | <ol style="list-style-type: none"> 1. Ikoyi Pry School, Osbourne 2. Dodan Barracks Pry School 3. Ireti Pry School Mekuwen Road 4. Obalende Pry School, Ijeh Police Barracks |

| | |
|----------------|--|
| Ibeju-Lekki | <ol style="list-style-type: none"> 1. Community Pry School. Abegede, Ileran-Igbe-Araromi-Arapagi Road, Abegede Village. 2. Fazil Omar Ahmadiya Pry School, Idado, Obadore-Idado Road, Idado. 3. Roman Catholic Mission Central Pry School Lekki, Chief Obafemi Awolowo Museum Road. 4. St. Peter's Ang. Pry School, Oga Quarters, Oketun-Magbon Alade. |
| Ifako-Ijaye | <ol style="list-style-type: none"> 1. African Church Pry School, Ifako-Ijaye, 16 College Rd, Ifako-Ijaye. 2. St. Kizitos Catholic Pry School II, Iju Station Bus Stop. Water Works Rd. 3. All Saints Pry School, Iju Rd. Egbatado Near, Iju-Garage. 4. Bishop Oluwole Pry School, Railway Station Iju Rd, Ifako-Ijaiye. |
| Ikeja | <ol style="list-style-type: none"> 1. Onilekere Pry School, Abeokuta Expressway Cement Bus Stop. 2. State Pry School, 7/9, Ajakaiye Str, Mangoro, Ikeja. 3. Lagos State Model Nur&Pry School, Olusosun, Howson Wright Estate, Olusosun, Oregun. 4. Military Cant. Pry School, Military Cantoment, Ikeja. |
| Ikorodu | <ol style="list-style-type: none"> 1. Methodist Pry School Agura, Itunoke, Agura. 2. Methodist Pry School, Gberigbe, Agura Road, Gberigbe. 3. Methodist Pry School, Ewu-Elepe, Along Ijede Rd, Ikorodu. 4. Methodist Pry School, Oke-Eletu, 55 Ijede Rd, Oke-Eletu, Ijede, Ikorodu. |
| Kosofe | <ol style="list-style-type: none"> 1. Ogudu Nur & Pry School, 2 Ojota Road, Ogudu. 2. G.R.A. Pry Sch Ogudu – Ojota, Emmanuel High Street. 3. Emmanuel Pry School, Emmanuel High School Str, Ojota. 4. Ojota Pry School, Ojota, Emmanuel High Street. |
| Lagos Island | <ol style="list-style-type: none"> 1. St. Davids Ang. Primary School, Okesuna Street, 2. Ebute Elefun Primary School, Holy Cross, Compund 3. Fazil-l-Omar, Ahmaddiya Primary School, St Saviours Okesuna 4. Holy Cross Cath. Sch, 19 Catholic Mission Street. |
| Lagos Mainland | <ol style="list-style-type: none"> 1. Herbert Macaulay Pry School,168, Herbert Macaulay Str, Adekun, Ebute Metta. 2. Lagos Mainland Local Government Pry School, Ebute Meta, 2, Ondo Str, Ijero, Ebute Metta West. 3. Talim – UI-Islam Pry School 4. Yaba Methodist Pry School |
| Mushin | <ol style="list-style-type: none"> 1. Alaba Pry School, Alaba Street, Mushin 2. Alafia Oluwa Primary School, Ilsamaja Road, Mushin 3. Isaga Close Pry School, Itire Road, Mushin 4. Islamic Model Mission Pry School, Itire Road, Mushin. |

| | |
|--------------|--|
| Ojo | <ol style="list-style-type: none"> 1. Army Children Pry School, Ojo, Military Cantonment, Ojo. 2. Military Pry School, Ojo, Military Cantonment, Ojo. 3. Local Auth. Pry School Iba, 1, Oba Goriola Street, Iba Town. 4. Fazil Omar Ahmadiya Pry School III, Km 22, Badagry Expressway Okokomaiko, Lagos. |
| Oshodi/Isolo | <ol style="list-style-type: none"> 1. Ire-Akari Pry School, Godwin Omonua Str, Ilasamaja Isolo. 2. Kusoru Pry School, Godwin Omonua Str, Ilasamaja Isolo. 3. Mafoluku Pry School, Makinde Street, Mafoluku. 4. Methodist Nur/Pry School, 42, Oshodi Road, Oshodi. |
| Shomolu | <ol style="list-style-type: none"> 1. Baptist Academy Pry School, Ikorodu Road, Obanikoro. 2. Baptist Pry School, Shomolu. 2/4 Agunbiade Street, Shomolu. 3. Igbobi Pry School 4. National Orthopedic pry School |
| Surulere | <ol style="list-style-type: none"> 1. Coker Pry School I. 1, Odiche Road, Coker Complex, Coker Village, Orile-Iganmu, Surulere. 2. Coker Pry School II. 60, Odiche Road, Coker Complex, Coker Village, Orile-Iganmu, Surulere. 3. Lagos Progressive Pry School. 15, Mba Street, Off Adeniran Ogunsanya Street, Surulere. 4. Ijeshatedo Pry School. 222, Ijasha Road, Surulere. |

APPENDIX 2 – OPERATIONAL BUDGET FOR THE BASELINE STUDY

| Category | Item | Phase 1 | | Phase 2 | | Phase 3 | | Total |
|---------------------------|--|--|-------------|---|-------------|----------------|--------------------|----------------------|
| Research Meetings | Meetings of Research teams | Refreshments of two Meetings of Research Team of 10 members @ N500 per person | N10,000:00 | | | Second meeting | N10,000:00 | N20,000:00 |
| | Meetings with Primary school Management | Two Baseline Research Team members meeting with two primary school teaching staff and administrator (2+3=5) per school @ N500 per person (5*500)=N2,500:00 In 4 primary schools across 20 LCDA | N200,000:00 | | | Second meeting | N200,000:00 | N400,000:00 |
| Research Materials | Stationeries | Four (4) cartons of A4 Paper @ N9000:00 | N18,000:00 | | | | N18,000:00 | N36,000:00 |
| | | Two (2) Tonners for Printer @ N25,000:00 | N50,000:00 | | | | N25,000:00 | N75,000:00 |
| | | 20 Packets of big envelope @ N1500:00 | N30,000:00 | | | | | N30,000:00 |
| | | 20 Packets of small envelope @ N500 | N10,000:00 | | | | | N10,000:00 |
| | | 5 Stapling Machines @ N3,000:00 | N15,000:00 | | | | | N15,000:00 |
| | | 5 Stapling Pins @ N1000:00 | N5,000:00 | | | | | N5,000:00 |
| | | 50 Flat Files @ N50 | N2500:00 | | | | | N2500:00 |
| | | 20 Markers @ N200 | N4,000:00 | | | | | N4,000:00 |
| | | Paper clips, scissors, rubber bands and board pins | N10,000:00 | | | | | N10,000:00 |
| | | One (1) cartons of ruled sheet @ N6000:00 | N6,000:00 | | | | | N6,000:00 |
| | Biros | N20,000:00 | | | | | N20,000:00 | |
| | Production of Research Instrument | Typesetting of Instruments | N20,000:00 | | | | | N20,000:00 |
| | | Platemaking | N10,000:00 | | | | | N10,000:00 |
| Printing of questionnaire | | N120,000:00 | | | | | N120,000:00 | |
| Transportation | Hiring of Car | Daily hiring of vehicle to visit 80 schools @ visitation of 2 schools per day =40 days @ N20,000:00 per day | N800,000:00 | Daily hiring of vehicle to visit 80 schools @ visitation of 2 schools per day =40 days @ N20,000:00 per day | N800,000:00 | | | N1,600,000:00 |
| Data Analysis | Remuneration for one Computer analyst for one month @ N50,000:00 | | | | N50,000:00 | | | N50,000:00 |
| | Remuneration for one Data operator for one month @ N60,000:00 | | | | N50,000:00 | | | N50,000:00 |

| | | | | | | | | |
|-------------------------------|----------------------------|--|-------------------|--|-----------------|--|-----------------|--------------------|
| Secretariat | | | N5,000:00 | | N5,000:00 | | N5,000:00 | N15,000:00 |
| Preparation of Project Report | Production of final report | | | | | | N100,000:00 | N100,000:00 |
| Contingency @ 10% | | | N20,000 | | N50,000 | | | N70,000 |
| Total | | | N1,355,500 | | N955,000 | | N358,000 | N2,668,500 |

APPENDIX 3 – QUESTIONNAIRES

a. Teachers Questionnaire

SECTION A

1. Name of School: -----

2. LGA: -----

3. Sex: Female Male

4. Educational Qualifications

1) Secondary Education O' Level Teachers Grade II

2) NCE (Subjects ----- and -----)

3) B.Sc. (Course -----)

4) B.Sc. Ed (Course -----)

5) PGDE

6) ND (Subjects -----)

7) HND (Subjects -----)

8) Any other (specify -----)

5. Are you a specialist science teacher in your school?

Yes No

6. Do you teach all primary school subjects?

Yes No

7. Year of Teaching Experience

0 – 5 years 6 – 10 years above 10 years

8. What Basic science class do you teach?
- | | | | |
|---------|--------------------------|---------|--------------------------|
| Basic 1 | <input type="checkbox"/> | Basic 4 | <input type="checkbox"/> |
| Basic 2 | <input type="checkbox"/> | Basic 5 | <input type="checkbox"/> |
| Basic 3 | <input type="checkbox"/> | Basic 6 | <input type="checkbox"/> |
9. How many periods do you teach basic science in a week? -----
10. Do you conduct practicals when teaching basic science? Yes No
11. How frequently do you conduct the practicals?
- | | | | |
|--------------|--------------------------|--------|--------------------------|
| Always | <input type="checkbox"/> | Rarely | <input type="checkbox"/> |
| Occasionally | <input type="checkbox"/> | Never | <input type="checkbox"/> |
12. Do you have a science laboratory in your school? Yes No
13. If you answered 'Yes' to question 12 then rate your laboratory as
- | | | | |
|-----------------|--------------------------|-----------------|--------------------------|
| Fully equipped | <input type="checkbox"/> | Poorly equipped | <input type="checkbox"/> |
| Partly equipped | <input type="checkbox"/> | Not equipped | <input type="checkbox"/> |
14. Do you have computers for teaching basic science in your school?
 Yes No
15. Do you use computers for your daily work / personal use?
Yes No
16. If you answered 'Yes' to question 15 what do you do with it?
- i. Use in teaching
 - ii. Sending & receiving emails
 - iii. Social media (Facebook, WhatsApp, Twitter, Instagram etc).
17. Rate the extent to which you use computers for your daily work.
- | | |
|------------------------|--------------------------|
| To a very great extent | <input type="checkbox"/> |
| To a great extent | <input type="checkbox"/> |
| To a moderate extent | <input type="checkbox"/> |
| To a little extent | <input type="checkbox"/> |
18. Do you have a smart phone (ie is your phone able to connect to internet)?
 Yes No
19. Do you have a functional email account? Yes No
20. If you answered 'Yes' to question 19 kindly write down your email address.
-

21. Do you improvise when the required materials are not available? Yes No

22. If you answered 'Yes' to question 21 rate the extent to which you improvise

To a very great extent

To a great extent

To a moderate extent

To a little extent

23. Do your pupils like experiments when they participate? Yes

No

24. How do you encourage your pupils to observe their environment?

SECTION B

Use the following to answer the questions that follow

A= Always = 4

S= Sometimes= 3

R= Rarely= 2

N= Never= 1

| | | A | S | R | N |
|----------|--|---|---|---|---|
| 1 | What instructional method(s) do you use in teaching. | | | | |
| | Lecture method | | | | |
| | Demonstration method | | | | |
| | Discussion method | | | | |
| | Guided – Discovery | | | | |
| | Cooperative learning | | | | |
| | Project method | | | | |
| | Individualized instruction | | | | |
| | Assignment method | | | | |
| | Field trip method | | | | |
| 2 | What instructional materials do you commonly use in teaching. | | | | |
| | Real objects (Laboratory equipment) | | | | |
| | Specimen | | | | |
| | Charts | | | | |
| | Flannel graph | | | | |
| | Computer | | | | |
| | Internet | | | | |
| | Improvised materials | | | | |
| | Models | | | | |
| | Use of projectors | | | | |
| 3 | Which of these home assignments do you commonly give: | | | | |
| | Reading assignment | | | | |
| | Writing assignment | | | | |

| | | | | | |
|----------|--|--|--|--|--|
| | Home work requiring consulting people in the community | | | | |
| | Home work requiring students to solve problems | | | | |
| | Home work requiring students to work in groups | | | | |
| | Home work requiring students do project | | | | |
| | Home work requiring students to use ICT | | | | |
| 4 | Which assessment techniques do you commonly use for assessing students? | | | | |
| | Quiz | | | | |
| | Assignment | | | | |
| | Objective test | | | | |
| | Essay Test | | | | |
| | Practical test | | | | |
| | Observation | | | | |
| | Individual Project | | | | |
| | Group project | | | | |
| 5 | Which common problem(s) do you encounter with students in your teaching? | | | | |
| | Truancy | | | | |
| | Lateness | | | | |
| | Not copying of notes | | | | |
| | Not carrying out home work | | | | |
| | Noise making in class | | | | |
| | Untidiness | | | | |
| 6 | What problem(s) do you encounter with the school authorities with regards to teaching science subjects? | | | | |
| | Unavailability of teachers 'copy of the textbook | | | | |
| | Absence of laboratory equipment and consumables | | | | |
| | Unavailability of laboratory manual | | | | |
| | Non-provision of teaching facilities | | | | |
| | Lack of cooperation | | | | |
| | Poor laboratory environment | | | | |
| 7 | What type of support do you get from parents? | | | | |
| | Supervision of students home work | | | | |
| | Funding of science projects | | | | |
| | Procuring laboratory equipment | | | | |
| | Maintaining discipline in school | | | | |
| | Improving community relationship | | | | |
| 8 | What type of support do you get from the community? (Banks, individual donors, Industries) | | | | |
| | Supply of laboratory equipment | | | | |
| | Visit of students to industries / factories | | | | |
| | Organization of seminars for students | | | | |

| | | | | | |
|-----------|---|--|--|--|--|
| | Assistance in science activities | | | | |
| | Supply of science textbooks | | | | |
| | Supply of laboratory furniture | | | | |
| 9 | What type of support do you get from the Parents Teachers Association (PTA) in teaching science? | | | | |
| | Supply of laboratory furniture | | | | |
| | Assistance in employing teachers | | | | |
| | Assistance in procurement of laboratory facilities | | | | |
| | Supply of science text books | | | | |
| | Supply of science magazines | | | | |
| 10 | What form of in- service training have you benefitted from your school/ Educational Districts? | | | | |
| | Workshops | | | | |
| | Seminars | | | | |
| | Conferences | | | | |
| | Short -term courses | | | | |
| | School- based teacher professional support | | | | |

b. Head Teachers Questionnaire

1. Name of School: -----

2. Average No of pupils per class: -----

3. No of Basic Science classes in the Time Table: -----

4. Does the school have a Science Laboratory: -----

5. Is the laboratory equipped? Rate accordingly

i. Fully equipped

ii. Partly equipped

iii. Poorly equipped

iv. Not equipped

6. Does the school have ICTs for teaching? List the ICTs the school have

7. What resources does the school have to teach science?

8. What support does the school give the teachers for teaching science?

9. What science competition have the school participated in

i. -----

ii. -----

iii. -----

10. Have the school won any science competition.

Yes

No

11. Study the performance of the school in the last 5 years in science at the First School Leaving Certificate, what trend is observed.

12. What support do the school receive from:-

i. The parents

ii. The community

iii. Any corporate organizations/NGO/ individuals.

