

# Securing SDG4 by Improving Teacher's Lesson Note With "Smart" On Basic Four Students' Science And Technology In Irewole Local Government, Ikire, Osun State.

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**Abstract:** *The program and plan for Sustainable Development Goals (SDG4) is an important goal that supports inclusive society as a foundation for ensuring a life of self-reliance which can be achieved to a large extent on how the teachers deliver their lessons in the classroom by having good lesson plan with SMART objectives, as a guide for quality teaching and help students to have skill.. The study is aiming at training teachers in Basic science and technology at cluster base in Irewole local Government to acquire 21st century skills. The study adopted pre-test post-test, quasi-experimental design. Multistage sampling procedure was used to select 50 teachers for the study. Training packages booklet were used as treatment for the training of teachers teaching Basic science and technology. The instruments for data collection were constructed and validated with a sample of 20 participants and the validation exercise yielded the Cronbach Alpha reliability coefficient of  $r = 0.75$ . The data were analysed using ANCOVA; the result reveals significant effect of treatment ( $F=33.057, p<0.05$ ), insignificant of writing lesson of teaching method SMART ( $F=38.945, p>0.05$ ) and significant interaction effect of teaching method and Treatment which is writing lesson note with SMART objectives ( $F=0.39, p<0.05$ ) on teacher's lesson note writing skill with SMART objectives. Therefore, teachers should use skills of writing lesson note with SMART objectives that involve learners in the learning process. However, if is discharged with good lesson note contained SMART objectives will improve achievement of learners. Therefore, the emphasis is on the teachers of Basic science and technology, ensuring using good teaching method with lesson note of SMART objectives, in the classroom for students to acquire skills to be self-reliance.*

**Keywords;** SDG4, Cluster training, good methodology, lesson note, SMART objectives.

## Introduction

Teaching methodologies are teaching techniques that are used to facilitate lesson. Teachers should apply appropriate teaching methods that best suit specific objectives stated, and level of achieving good outcomes to facilitate lesson, which is the process of knowledge transmission. In the traditional teaching, many teaching practitioners widely applied teacher-centered methods to impart knowledge to learners compared to student-centered methods. Teacher-centered methods only involve teacher doing the teaching alone without involving students' activities, teacher is active throughout the teaching while student is passive. While in student-centered methods, student is allowed to involve in teaching activities by asking questions, speak out his/her opinion on a topic, speak out previous knowledge of a topic that make learner learn from simple to complex. The uses of appropriate teaching methods that involve student's activities allow proper learning and bring out a good change in behavior. The primary purpose of teaching at any level of education is to bring a fundamental change a good outcome performance in the learner (Tebabal and Kahssay, 2011).

The performance of student depends on the method of teaching adopted by teacher in teaching activities, and the teaching activities fully depend on the planning for the teaching which is done through lesson note used to plan for teaching. In writing lesson note, there must be well stated objectives to be achieved at the end of the teaching, this will guide the teaching and learning activities. The objectives stated for teaching and learning activities must be SMART. It is important to develop SMART objectives to be achieved in a lesson for better performance. The SMART acronym is a tool designed to help teachers set objectives in an effective manner that will yield good performance of students. The acronym SMART objectives are methods for setting Specific, Measurable, Achievable, Relevant and Time bound objectives. The SMART framework defines objectives clearly and practically, making them more actionable and increasing the likelihood of performance of students.

The specific aspect of SMART has to do with, "what to teach", "when to teach", "where to teach", "with what to teach" and "how to teach". The more information a teacher is able to contribute in teaching, the better the performance of students will be, and it will be easier to achieve the stated objectives since it has been defining the path, to achieving them will be clearer. For SMART objectives to be useful it must have a quantitative way of measuring it. Which is measurable aspect of SMART. The quantitative ways help in achieving objectives stated through the performance of students, this is achievable part of SMART. The stated objectives must be relevant, to the curriculum used for setting objectives and for teaching, and most importantly must be time-bound, which is the most important factors that determine whether an objective has been met. A teacher need to set start and end times to achieve stated objectives for good academic performance.

Very often, regular poor academic performance by the majority of students, and inability to sustain themselves or to be self-dependent after leaving schools or colleges to put into practice what they have learnt so far is fundamentally linked to application of

ineffective teaching methods by teachers to impact knowledge to learners (Adunola, 2011). The effectiveness of teaching methods is often reflected by the achievements of learners and ability of students to be able to perform psychomotor skills which promote sustainable development in learners and in our society; this indicates the quality of teaching which is acquired through appropriate lesson note.

Zakaria, Chin and Daud, (2010) described lesson note is an organized set of activities designed or steps to follow in presenting piece of course or topic while working toward achieving one or more learning objective. In writing or preparing lesson plan, first, topic must be well stated and introduced appropriately, review must be done to prior learning and emphasize on previous knowledge. Moreover, appropriate instructional material must be used and application of strategies that will actively involve students in the learning process, utilizing of varieties of media to illustrate concepts and processes, make sure that the lesson flows easily and logically, also, facilitate opportunities for practice. In addition, assess what students have learned, summarize the lesson and give assignment.

Quality education can be defined as learning that focuses on the whole child, the social, emotional, mental, physical, and cognitive development of each student regardless of gender, race, ethnicity, socioeconomic status, or geographic location. According to (Audrey, 2013) a quality education has the power to transform societies in a single generation, provide children with the protection they need from the hazards of poverty, labour exploitation and disease, and give them the knowledge, skills, and confidence to reach their full potential. For quality education to be guaranteed, trained and skillful teachers are needed, teachers that have passed through teacher education, both pre-service and in – service, which help teachers develop teaching methods and skills that take new understanding of how children learn the teacher feedback mechanisms should be monitored. Chijioke, 2014. Good teachers are skilled not only in instructional methods, but also in evaluation and assessment practices that has been itemized in their lesson note, that allow them to gauge individual student learning and adapt activities according to student needs

Quality education provides outcomes and skill needed for individuals, communities, and societies to move forward and develop. It allows schools to align and integrate fully with their communities and access a range of services across sectors designed to support the educational development of their students. A quality education is supported by three key pillars: ensuring access to quality teachers; providing use of quality learning tools and professional development; and the establishment of safe and supportive quality learning environments. The statement also describes the current state of education in the world and calls on educators to promote a whole child approach to education. Education is a human right and a public good that is critical to the health and future of the world reflected by SDG4.

In securing SDG4, research have shown that there were enormous progress on the goal to provide primary education to all children and achieving goal of universal primary and secondary education, affordable vocational training, access to higher education and more. The goal of the SDG4 is to secure a sustainable, peaceful, prosperous and equitable life on earth for everyone now and in the future especially by giving quality education to all children to keep the future. For this goal to be reached, everyone needs to do their part: governments, the private sector, civil society and every human being across the world, and in the goal of giving quality education teachers are rightly involved.

However, for a teacher to give quality education, there must be good planning of what to teach. Having good and comprehensive lesson note for proper instruction delivery and quality education, any teachers' training program must support teachers with enough practices about how to prepare good lesson plans, so as not to be confused and diverted from the skill of writing a comprehensive lesson note (John, 2006). Planning is an important step which reminds the teacher what to teach and do in the class, and gives students confident about their teacher (Harmer, 2001). Studies focused on the problems teachers encounter during their classroom teaching when lesson is not well planned (Dickson, Riddlebarger, Stringer, Tennant and Kennetz, 2014. This occurs mostly with female teachers that find it stressful in managing the problems encounter in the classroom teaching.

Gender covers socially constructed along with ethically based roles of women and men with a view to understand how unequal power relations between them are shaped and operate (Hesse-Biber and Carter, 2000). They further explained that gender relations do not operate in a social vacuum but are product of the ways in which institutions are organized and reconstituted. Gender is a broader concept, having a social bearing and important characteristics in addition to mere concept masculinity and femininity.

Nevertheless, it has been viewed in literatures that teacher needs re- training of how to write good lesson note, in the teaching and learning process to achieve the stated objectives, to make teaching and learning meaningful and students to have both cognitive and psychomotor skill, that will make them to be self – dependent and self-reliance. (Berliner, 2001). In the Arabic context, a study which has been conducted in the Emaciates context found that teachers not only encounter difficulties in the classroom management but also in the implication of lesson planning because they engage in other business and make them lack concentration, (Dickson et al., 2014). Another study conducted on the Yemeni graduated students on their fourth Year at their B.A program found that teachers encounter many problems in the planning and applying the lesson steps according to the allowed time, because of the stress of

engaging in other business (Bin-Hady, 2018). Thus, the current study aims at helping the teachers by training them on how to improve in writing good and comprehensive lesson note.

### Research hypotheses

1. What is the significant main effect of treatment on teachers' lesson note writing with SMART on the achievement of the students in Basic science and technology.
2. What is the significant main effect of teaching method of teachers on the achievement of the students in Basic and science and technology.
3. What is the significant main effect of gender of teachers on the achievement of the students in Basic and science and technology.
4. What is the significant interaction effect of treatment and teaching methods on the achievement of the students in Basic and science and technology.

### Methodology

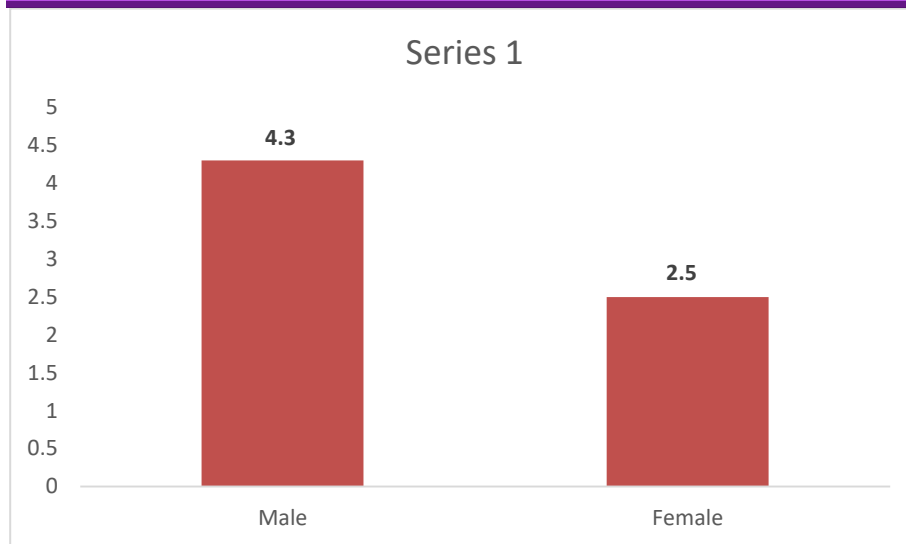
The study was a quasi-experimental research design. The research makes use of pre-test, post-test, control group design. Multistage sampling techniques were used for selecting 90 teachers that participated in the training. Cluster sampling technique was used at the first stage, and other stages adopted random sampling techniques for selection of teachers for the training, in the Irewole local government of Osun state, using random sampling techniques. The sample size was made up of 100 (50 for the experimental group and 50 for the control group). The instrument used for data collection was the Teacher Skills Acquisition Test (TSAT). It consisted of two sections as follows: Section A: Students' Biodata; Section B: Consisted of space for writing lesson note test for the impact of the treatment on teacher's skill of writing lesson note. The research instrument received a face and content validation from experts in the Faculty of Education, University of Ibadan. Ten days' intensive training programme was organized for the training of teachers, four people were trained for two days for participating in the training program and for data collection.

The data were collected using questionnaire, attached with test on writing of lesson note, the instruments were administered personally with the assistance of four research assistants. Descriptive and inferential statistics were used in analyzing the data at 0.05 significance level.

### Results

Table 1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	639.067 <sup>a</sup>	2	319.534	8.609	.001	.268
Intercept	1040.829	1	1040.829	14.127	.000	.374
pre_test	7.790	1	7.790	.210	.649	.004
Treatment	524.357	1	524.357	33.057	.000	.231
Teaching Methods	514.157	1	514.157	0.398	.634	.256
Gender	552.243	1	432.23	12.243	.552	.123
Treatment*Teaching Methods	534.667	2	534.212	38.945	.001	.242
Error	1744.553	47	37.118			
Total	40859.000	50				
Corrected Total	2383.620	49				



Gender effect on teaching

**Hyp 1;** There is no the significant main effect of treatment on teachers' lesson note with SMART on the achievement of the pupils in Basic science and technology.

From table 1:  $F(1,47) = 33.05$  where  $P < 0.05$  which means there is a significant main effect of treatment on the ability of teachers in lesson note writing among teachers who receives treatment and those without treatment. The effect size of treatment on teachers' lesson note writing ability is also 0.231 which means treatment contributes 23.10% to their ability in writing lesson note with SMART. Therefore, we reject the hypothesis.

**Hyp 2;** There is no significant main effect of teaching method of teachers on the achievement of the students in Basic and science and technology.

From table 1:  $F(1,47) = 0.40$  where  $P > 0.05$  revealed that there is no significant main effect of teaching methods of teachers on the achievement of the students on Basic Science and technology. That is students that were taught with normal teaching method by their teachers without using lesson note with SMART objectives did not have higher achievement in basic science and technology. The effect size is 0.256 which is 25.6%. Therefore, the hypothesis is rejected.

**Hyp 3;** There is no significant main effect of gender on the achievement of the students in Basic science and technology

From table 1:  $F(1,100) = 12.24$  where  $P > 0.05$  which means there is no significant main effect of gender on the achievement of the students in Basic and science and technology. That means whether a female or male teacher teaches, does not have effect on the achievement of the pupils but using SMART lesson note that guide teacher to teach student step by step, which allow them to understand the concept of a topic.

The effect size of teachers' gender on the achievement of students in Basic science and technology is 0.123 which is 12.3%. Therefore, we reject the hypothesis.

**Hyp 4;** There is no interaction effect of treatment and teaching method on the achievement of the students in Basic science and technology

From table 1:  $F(2,47) = 12.243$  where  $P < 0.05$  which means there is interaction significant main effect of treatment and teaching method on the achievement of the students in Basic and science and technology. The effect size of using good teaching method and treatment, which is writing lesson note with SMART is 0.242 which is 24.2%. Therefore, we do not reject the hypothesis.

## Discussion and Findings

The findings revealed that there is main effect of treatment on teachers' lesson note writing ability. Hence, teachers need to be updated by training them often to acquire skill on current or relevant way of writing good lesson note, this will help them to deliver instruction in such a way that will help the student to understand the actual concept of what they are been taught, so that they can apply the knowledge to their physical life to produce things that will smake them to be self-dependent in future. This corroborate the study of Dickson, Riddlebarger, Stringer, P., Tennant and Kennetz (2014), that writing a good and detailed lesson note helps in instruction delivery to make a student learn a skill ,that is psychomotor skill.

In addition, hypothesis two shows no significant main effect of teaching method on the achievement of the students in Basic science and technology The result shows that teachers that used teaching methods used before, without using lesson note with SMART objectives to teach students did not impact into the students to have good performance in basic science and technology.

This explains that having using only methods in teaching without making the objectives of what to be taught SMART will not help the students' achievement. This in support of Audrey (2017) said, she is seen changes in the education field through the methods of teachers in teaching by following the objectives of the concept to be taught.

Also, hypothesis three show no significant main effect of gender on the achievement of the students in Basic science and technology. The mean show that male teachers still perform better than female teachers in writing good lesson note with SMART objectives to teach. This can be explained that females are distracted with home chores and activities after living schools which distracted them psychologically to be focused when writing lesson note, and this distraction make them to write lesson note in hurry which did not allow them to bring out good objectives of the concept they want to teach. This in contrary to the study of Maqsood, Munazza and Ishtiaq, (2018) that females teach well using good lesson plan and have good classroom management.

Moreover, the result in research question four gives an indication that there is significant interaction effect of treatment and teaching methods on the achievement of the students in Basic science and technology. This implies that using good teaching method with lesson that has SMART objectives improves the performance of the student in basic science and technology. This buttresses the study of Dixon (2016) who explained that teaching with good methods and following the step by step of lesson plan give good outcome in teaching.

### **Conclusion**

This study revealed the importance of lesson note with SMART objectives in teaching, which it helps teachers to think through what learners will achieve in the lesson, ease their activities in the teaching classroom, provides a framework for organizing ideas, methodology, materials, helps teachers to know where they are going and how they are going to get there. It was discovered at the end of the training that teachers that use only methodology in teaching without writing lesson note or writing lesson with SMART objectives did not performed better in class and this was revealed through their students' achievement in basic science and technology. It is necessary before planning any daily lesson, teacher should read through their lesson notes and prepare their lesson materials, think about the stated learning objectives and consider whether the recommended procedure will achieve the aim, and if not amend the procedure to suit the particular needs of the pupils or students. But it was discovered that many teachers had lost the skill of writing a good lesson note with SMART objectives and concentrate on teaching any how in the classroom.

### **Recommendations**

To achieve a sustainable development Goals (SDG4) by making students to be self – reliance or self – dependent, skills development and creativity are necessary through quality teaching right from the lower class. The quality teaching can be achieved if;

- Teachers concentrate on writing good lesson note with SMART as a plan for their teaching.
- If incentives are given to teachers by government, to motivate them in order not to engage in other business.
- Salary is paid as at when due.
- Good salary scale is used for teachers to make them financially stable.
- Regular in-service training for teachers to update them in acquiring skills for writing good lesson note for good teaching and learning activities.

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