**Teacher Educators’ Use of Active Learning Strategies for Attainment of Sustainable Development Goal 4**

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**Abstract**

In Nigeria, teacher education is offered in two types of institutions, namely: universities and colleges of education. The major role of teachers is the provision of quality education at all levels of education.

This is the focus of teacher educators in the process of curriculum implementation. which is the combination of the teachers and the learners’ efforts in prosecuting classroom activities, towards attaining educational goals. Education is a major driver for the realisation of the Sustainable Development Goals (SDGs) and UNESCO maintained that inclusive and quality education is the corner stone for transformative education which is unachievable without adequate and relevant contents in the curriculum. Apart from this, the imperative of active learning strategies which are interactive classroom manipulations in teaching and learning cannot be overemphasized.

It is against this backdrop that this study sought to examine the level of awareness of teacher educators in the use of active learning strategies in curriculum implementation in Nigeria’s teacher education institutions to attainSDG4.

A purposive sampling technique was used to sample two hundred and forty (240) teacher educators out of 2,310 from three Federal Colleges of Education in the South-East geo-political zone. The ratio was 120:70:50 in terms of the teacher educator’s population in the respective schools. A 28-item structured questionnaire, constructed on four-point Likert scaleand validated by three teacher educators, not involved in the study, was used for data collection. Mean was used for the data analysis. The findings have lots of implications on the attainment of the SDG4 by the year 2030. Suggestions were proffered on the need for re-training programme to get teachers acquainted with the active learning strategy skills to promote the attainment of the SDG4by 2030.

**Key words:** SDG**,** active learning, teacher education, curriculum implementation

**Introduction**

The sustainable development Goal 4 (SGD4) is one of the 17 sustainable development goals. It is an offshoot of Millennium Development Goals (MDGs) which were unattained in Nigeria. A review of the unattained MDGs according to UNESCO Institute for Statistics (2016) showed that:

* 59 million children of primary age were out of school;
* 1 out of 5 children drop out of school;
* 2 in 5 out-of-school children will never set their foot in the classroom;
* The learning achievement indicators showed that the proficiency in Mathematics and English levels was low; and
* There is an acute shortage of teachers and an estimated 26 million teachers were expected by 2030.

An analysis of the listed gaps showed that the number of children that have been excluded from school and illiteracy level appears to be high. UNESCO (2013) reported that in Nigeria, about 10 million children were out of school. The high illiteracy level could be one of the factors that could lead to conflict, especially where the people are hunger stricken, poor, and are living with environmental challenges.

Quality education, quantity and quality teachers are the major drivers through which the identified gaps could be filled. It may have been in the realization of the challenges that the SDGs came into operation. SDG4 has the following indicators

* Building and upgrading education facilities that are child disability and gender sensitive; provision of safe, non-violent, inclusive and effective learning environment for all.
* Ensure that all boys and girls have quality and equitable primary and secondary education system that will lead to relevant and effective learning outcomes.
* Ensure equal access of all women and men to affordable and quality technical, vocational and tertiary education.
* Increase the number of youths and adults who have relevant technical and vocational skills for employment, decent jobs and entrepreneurship.
* Eliminate gender disparity in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disability, the indigenous and children in vulnerable situations.
* Ensure that all youth and a substantial number of men and women achieve numeracy and literacy.
* Increase the supply of qualified teachers through international cooperation for teacher training in developing countries.

These indicator simply that the government must upgrade the facilities in the schools. All the learners, irrespective of their gender, ability, location and other conditions, including the internally displaced persons (IDPs), must be exposed to quality education. To train these persons, there should be enough qualified and competent teachers. The teachers should be skilled in the use of innovative teaching strategies, such as the active teaching/learning strategies. The active learning strategies that can be incorporated in the teaching-learning process according to Afuruobi, Izuagba, Obiefuna and Ifegbo (2015, p. 259) include:

* peer tutoring;
* small structures in-class discussion group;
* small group in which the learner is assigned a role and contributes to product there from;
* hands-on activities or projects that illustrate or expand instructional content; and
* better connections between classroom contents and the outside world.

The use of active learning strategies involves teachers ’knowledge in the use of the strategies; their awareness in the use of the principles and practices involved in active learning strategies; and their knowledge on how to use the active learning strategy to transform the conventional method (lecture) into interactive methods. It equally requires the teachers’ use of activities to overcome the barriers in classroom learning. Eison (2010) identified some of the strategies for overcoming the barriers as: use of in-class activities; use of think-pair-share and use of current events in the course content and re-training programme.

This implies that teacher educators must possess these skills to be able to impact on the pre-service teachers under their tutelage. It is against this backdrop that this study sought to examine teacher educators’ use of active learning strategies in curriculum implementation to attain SDG4.

To achieve these broad objectives. these four research questions were proposed: What is the level of awareness of active learning strategy for the attainment of SDG4 by teacher educators?

* What is the level of awareness of the values of active learning strategy for the attainment of SDG4 by teacher educators?
* What is the level of awareness of the use of active learning strategy to attain inclusiveness by teacher educators?
* What are the training programmes needed to increase the competence of teachers in active learning to the attainment of the SDG4?

**Research Methodology**

A descriptive survey design was used to identify the teachers use of active learning strategy for the attainment of theSDG4. A sample of two hundred and forty (240) teacher educators from a population of 2,300 teacher-educators from three colleges of education in the South-East Geopolitical zone of Nigeria were used for the study. A questionnaire containing twenty-eight (28) 4-point: Very High Level (VHL), High Level (HL), Low Level (LL) and Very Low Level (VLL). Likert scale items was constructed by the researchers and used to elicit information from the respondents. However, responses to the type of programs needed to train the teachers in active learning were scaled as Strongly Agreed (SA), Agreed (A), Disagreed (D), and Strongly Disagreed (SD).The questionnaire was validated by three specialists in Curriculum Studies, Educational Measurement and Evaluation and Development Studies.

The four-point scale was weighted 4, 3, 2, and 1 respectively for VHL/SA, A/HL, D/LL, and SD/VLL for positive statements and the reverse for negative statements. Mean responses were got from the cumulated weighted scores (CWS) divided by the number of the respondents. Mean scores were used for the analysis. A mean of 2.5 was used as a cut-off mean and showed a positive response; while a mean score of less than 2.5 depicted a negative response. The reliability of the instrument was conducted using Cronbach Alpha to determine the internal consistency of the items. The result yielded a reliability index of 0.87. The data generated were analyzed using simple mean scores.

**Results**

Research question One: What is the level of awareness of active learning strategy for the attainment of SDG4 by teacher educators?

**Table 1:** Mean Scores of Teacher Educators’ level of awareness of active learning Strategy for the Attainment of SDG4.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Items** | **VHL** | **HL** | **LL** | **VLL** | **CWS** | **EAN** | **DEC** |
| 1 | Active learning strategy involves engaging students in critical thinking about the SDG4 | 180 | 120 | 240 | 35 | 575 | 2.4 | Negative |
| 2 | Students speak on challenging issue on the SDG4 | 216 | 156 | 214 | 27 | 613 | 2.6 | Positive |
| 3 | Active learning involves collaborative learning | 152 | 126 | 268 | 26 | 512 | 2.1 | Negative |
| 4 | It involves problem solving based learning | 188 | 111 | 252 | 30 | 581 | 2.4 | Negative |
| 5 | It involves the use of case study approach | 160 | 108 | 284 | 22 | 574 | 2.4 | Negative |
| 6 | It involves giving and receiving feedback | 112 | 120 | 272 | 36 | 540 | 2.3 | Negative |
| 7 | It involves the use of reflective practices | 125 | 141 | 280 | 21 | 567 | 2.4 | Negative |
| **Grand Mean** | | **2.4** | | | | | | |

A grand mean of 2.4 showed that the teacher educators’ level of awareness on the use of the active learning strategy for the attainment of the SDG4 was low.

Research Question Two: What is the level of awareness of the values of active learning strategy for the attainment of SDG4 by teacher educators?

**Table 2:** Mean Score of Teacher Educators’ level of awareness of the values of active learning strategy for the attainment of SDG4

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **HL** | **HL** | **L** | **LL** | **WS** | **MEAN** | **DEC** |
| 1 | It transforms students from passive listeners to active listeners | 184 | 126 | 44 | 32 | 86 | 2.4 | Negative |
| 2 | Think-pair-share is used for structured group collaboration in large classes. | 132 | 144 | 32 | 42 | 50 | 2.3 | Negative |
| 3 | Use of popular films and video stimulates critical thinking | 168 | 132 | 50 | 29 | 79 | 2.4 | Negative |
| 4 | Pausing lectures encourage active engagement | 144 | 135 | 62 | 28 | 69 | 2.4 | Negative |
| 5 | Short in-class writing before the lectures help the students to prepare along with the lecturer | 172 | 120 | 40 | 40 | 72 | 2.4 | Negative |
| 6 | Formative evaluative cards are used during lessons | 200 | 96 | 46 | 32 | 74 | 2.4 | Negative |
| 7 | Students-posed questions stimulate student-teacher interaction | 160 | 120 | 40 | 40 | 60 | 2.3 | Negative |
|  | **Grand mean** | **2.4** | | | | | | |

A mean of 2.4 indicated that the teachers were not aware of the values of active learning strategies that can transform the classes into interactive ones.

Research Question Three: What is the level of awareness of the use of active learning strategy to attain inclusiveness by teacher educators?

**Table 3:**Mean Scores of Teacher Educators’ level of awareness of the use of active learning strategy for the attainment of SDG4.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **HL** | **L** | **L** | **LL** | **WS** | **MEAN** | **DEC** |
| 1 | Active learning strategy should not use one size- fit approach | 16 | 123 | 00 | 5 | 584 | 2.4 | Negative |
| 2 | Course contents should promote content like gender equity | 52 | 189 | 78 | 0 | 569 | 2.4 | Negative |
| 3 | The use of active learning strategy promotes building better connections between classroom content and the world outside of the classroom | 32 | 26 | 10 | 7 | 605 | 2.5 | Positive |
| 4 | It provides choices of how the students may complete projects or assignments | 68 | 44 | 30 | 5 | 577 | 2.4 | Negative |
| 5 | It helps to increase relevant technical skills that can lead to employability | 40 | 23 | 24 | 7 | 614 | 2.6 | Positive |
| 6 | It promotes inclusive and effective learning environment | 70 | 30 | 22 | 8 | 550 | 2.3 | Negative |
| 7 | It advocates for the use of technology to reach the unreachable. | 60 | 80 | 32 | 4 | 596 | 2.4 | Negative |
|  | **Grand mean** | **2.4** | | | | | | |

A grand mean of 2.4 showed that the teacher educators were not aware of the active learning strategy that can be used to attain inclusiveness in the SDG4

Research Question Four: What are the training programs needed to increase the competence of teachers in active learning to the attainment of the SDG4?

**Table 4:** Mean Scores of Teacher Educators’ Agreement on the Training Programs in the Use of Active Learning Strategy for the attainment of the SDG4

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **SA** | **A** | **D** | **D** | **CWS** | **MEAN** | **EC** |
| 1 | Workshops and seminars organised for teachers. | 484 | 231 | 56 | 14 | 785 | 3.2 | A |
| 2 | In-service programs to enhance the quality of teachers. | 432 | 204 | 68 | 30 | 734 | 3.1 | A |
| 3 | In-house review programs to update the teachers’ knowledge. | 456 | 174 | 90 | 23 | 743 | 3.1 | A |
| 4 | Exchange programs to realise the objectives of SDG4. | 504 | 180 | 96 | 6 | 786 | 3.3 | A |
| 5 | Teachers’ annual attendance to conferences. | 404 | 222 | 72 | 29 | 727 | 3.0 | A |
| 6 | Mentoring programs should be used in schools. | 400 | 189 | 114 | 20 | 723 | 3.0 | A |
| 7 | Distance learning programs can be used to reach teachers for training. | 480 | 180 | 100 | 10 | 770 | 3.2 | A |
| **Grand Mean 3.1** | | | | | | | | |

A mean of 3.10 showed that the teachers strongly agreed that the re-training programmes would enhance the use of active learning strategies for the attainment of the SDG4.

**Discussion**

The data in Table 1 indicate that teacher educators’ level of awareness was low (Grand mean =2.4).This finding shows that, teacher educators’ awareness of the active learning strategies was low. implying that the teachers still use the traditional lecture method in curriculum implementation at the colleges of education. They are not very aware of active learning strategies which are learner-oriented.

The teachers’ low-level awareness in the use of active learning strategies has lots of implications for curriculum implementation in terms of the attainment of Sustainable Development Goal 4 by 2030. The teachers were aware that the students could discuss issues raised in the class, which entails active participation in the class; but they were not conversant with how to use the active learning strategies to make the students participate actively in the lesson.

The teachers’ awareness that active participation involves the use of critical thinking skills-where the learners are expected to share knowledge, discuss cases and engage in problem solving is low. Critical thinking is the essence of education and it promotes transfer of knowledge, which is an ingredient for quality life and inclusive education. Active participation in the use of active learning strategy agrees with Obanya’s (2014), transformative education which requires interactive and creative teaching, whereby the learners are given opportunities to participate in the teaching-learning activities and think out of the box to innovate and create new things, ideas and processes.

With the use of active participation, gender equality is ensured; incorporation of those with disability is assured because every class member is given an opportunity to participate and the teacher facilitates the activities and the discussion. Problems will be solved through collaboration especially as every individual irrespective of gender, ability or disability has a role to perform once they are given the opportunity. The act of involving students in group discussions or group activity is part of the inclusive education, which UNESCO(2015) advocated for, in the Sustainable Development Goal 4.Students’ ability to retain information, exhibit attitudinal change and solve problems should be initiated through co-operative learning strategies and motivated through group work as these would improve inclusive education.

Also, teacher’s awareness of the values of active learning strategies was found to be low. The strategy can transform class activities into interactive interactions, involving the learners. Their mean response scores of2.3 and 2.4respectively, in the use of ‘think-pair-share; use of films and videos from websites that could make learners active exhibited their ignorance of the values of active learning strategies. Lecture method is very common in the colleges of education and it has continued to make learners indolent, inactive and passive in the lecture halls. Connecting course content to current events (incidental curriculum) and integrating the use of films and videos from relevant website scan transform the lecture into a lively classroom. Such videos and films stimulate thinking, brainstorming, sharing of knowledge and contributions from different individuals.

The teachers’ low level of awareness in the use of websites may not be unconnected to inadequate facilities, and the teachers’ non-compliance with to ICT. To attain the SDG4, there is need for adequate facilities which must be addressed to meet the targets in the SDG4. The use of website requires adequate provision of electricity and internet facilities (Offorma, 2015). Students who use websites may find more information other than the one provided by the teacher. Ideas such as flooding, which is one of the emergent issues in the climate change can be compared with peers online to ascertain what is happening in other places and ideas could be exchanged. Agitations are more when people do not have information or when they have unguarded information, which is synonymous with the use of websites. The role of the teacher becomes crucial in the course of lesson delivery as students are taught how to use the search engines or links to appropriate websites for more information.

In transformative classrooms, students can proffer solutions based on their environmental experiences; they can visit sites that were flooded, take pictures that can further be discussed in the class. Websites with simulation on flooding could be assessed from the internet. Students can also search for information with links from the website provided by the teacher to add to their own knowledge. The use of popular films and vignettes will stimulate their creative thinking skills and such ideas can be shared using Think-pair-share teaching strategy. The information gathered using the active learning strategy adds to their knowledge capacity and makes the lesson relevant to daily life experiences.

Teachers’ inability to make lessons relevant to daily life activities makes students to learn in abstraction and memorize information. Lack of co-operation in problem solving tasks creates disengagement while learning. This assertion supports Eison (2010) whose findings showed that students engaged in tasks had explicit opportunities for thinking and responding to views and opinions of peers. A thinking mind is a growing mind and such minds think and grow by sharing ideas on what has been taught, write about it and relate the idea to daily life experiences.

The study also revealed that teachers had a low-level awareness of the use of active learning strategies to attain inclusiveness. A mean score of 2.4 and below showed that the teachers did not agree that active learning strategy should use one size fits all approach in teaching. The result negates the principles of individual differences encountered in the classroom with mixed ability learners. All learners are not the same, they do not have the same exposure and may not have come from the same background. It is for this reason that the active learning strategies which encourage peer tutoring, small structured in-class discussion groups, small groups in which the learner is assigned a role and contributes to the product, and hands-on activities or projects that illustrate or expand instructional content as observed by Afuruobi et al (2015) should be encouraged in the classroom, instead of the lecture method. Students should be engaged with information in a variety of formats, such as: websites, videos, and podcasts. Books, magazines, and periodicals, which provide rich and meaningful ways for students to progress through the materials as well.

The teachers’ level of awareness is high (Mean = 2.5), on ‘the use of active learning strategy promoting better connections between classroom content and the world outside of the classroom’. The response may be because of what is happening in the job market where graduates cannot relate the content of what has been learnt to actual life situation. Students on the other hand, may not have been able to build better connections between the content and the world outside the classroom as a result of the type of relationship experienced in the class. Teachers in most cases carry the bright ones along at the detriment of the less bright ones. Gender insensitivity may be exhibited in the class; such students have poor relationships that could affect their studies.

Students’ emotional needs are important because without feeling safe and understood, no instructional strategy will be effective. By building relationships in the classroom, students will feel comfortable enough to come out and say what is in their minds without having to wait for an opportunity from the teacher to do so. Students want to feel valued and that they are a part of a larger school community. Teachers therefore must be ready to adopt and adapt to new ideas especially where the existing methods appeared not to solve the problem encountered in the society. Teachers should adopt the new strategies towards solving the problems associated with the developmental goals of the learners.

The use of inclusive and effective learning environment is one of the attributes of the active learning strategy. The provision of inclusive learning environment should be the prerogative of the school structure. The policy of Leave No one Behind should guide the provision of facilities and infrastructure in schools. The visually impaired should enjoy the same facilities with those without disability. Learners should all be exposed to learning materials so as to adequately prepare them for the job market irrespective of gender. It is in recent development that some children are internally displaced because of violence and insecurity. Such children should not be cut off from educational opportunities. With technology, teachers could reach such children online. The government has to make provision of such facilities.

Teachers were of the perception theatre-training program, in the use of active learning strategy is imperative and that such training could be inform of workshops conferences, mentoring, in-house reviews and seminars. Such the re-training, the study found will improve the quality of the teacher, help in the realization of the objectives of the sustainable development goals, promote lifelong learning, improve institutional cultures and may lead to curriculum revision in colleges of education.

There is no gain saying that the re-training programme will improve the quality of teachers which UNESCO (2015) has pointed out is a major problem encountered in teaching and learning. It will be a double tragedy if the teachers are in shortfall and the ones in employment do not possess quality skills to impart knowledge to the learners. It may then be assumed that the implementation of the curriculum to realize the SDG4 is not in-view. Training and retraining programs should be able to increase the quality and quantity of teachers Re-training programmes help to update teachers’ knowledge and skills and promote lifelong learning and improve the quality of teaching and learning in schools. Teachers are expected to be conversant with the21st century best practices in teaching and learning (Offorma and Obiefuna, 2017). The active learning strategy is one of such innovative practices of the 21st century that can help in realizing the SDG4.

The outcome of workshops and seminars can lead to curriculum review/revision especially when it is observed that the existing strategies for curriculum implementation do not match the current problems in the society. The era of mastery through memorization and regurgitation of knowledge is being replaced with problem-solving tasks which involve knowledge of the skills and, ability to solve problems through active participation.

The SDG4 requires innovative skills and teachers have to be trained in the use of the innovative skills for the solution of the problems associated with other SDGs. The SDG4 programme needs to be integrated in the school curriculum and adequate innovative strategies applied. It is only by this measure, that problems associated with people living in extreme poverty, gender imbalance, environmental degradation and health care issues will be addressed and resolved by integrating them in the school programmes.

**Conclusion**

This paper examined the level of awareness of teacher educators in the use of active learning strategy to enhance the implementation of the SDG4. It also probed the extent which training and retraining programs will increase the quantity and quality of teachers in the use of the active learning strategy. The study found out that teacher educators’ awareness of the active learning strategies, their values and uses was low. They agreed that they need training in the strategy to be able to adopt and adapt to the new teaching strategy. The conventional method of teaching should be jettisoned, and transformative and interactive strategies introduced in the classrooms for the SDG4 to be attained by 2030.

**Recommendations**

The following recommendations are proffered for the attainment of SDG4 by 2030:

* There is need for re-training of teacher educators in the colleges of education who produce teachers for Universal Basic Education level, which is the foundation for all other levels of education.
* In view of the present status of teacher educators, there is urgent need for teacher education curricula review to incorporate the 21st century teaching skills needed to attain the SDG4.

**References**

Afuruobi, A; Izuagba, A.C; Obiefuna C.A and Ifegbo, P.C. (2015). Equipping Teacher Trainee for Enhanced Students Engagement: Teacher Educators Awareness. *International Journal of Educational Research. 14(4)*, 83-91.

Eison, J. (2010). *Using Active Learning Instructional Strategies to create excitmentand enhance learning.* Unpublished manuscript. ERIC Document Reproduction Service.

Federal Republic of Nigeria(2013) National Policy on Education 4th edition, Lagos: Nigeria Educational Research and Development Council.

Federal Republic of Nigeria, (2015). Millennium Development Goals: End- point Report 2015.

# Howe, , C, Tommie, A, Greer, K, Makenzie, M 1995) Peer collaboration and conceptual growth in Physics task influence of children's understanding in heating and cooling *cognition and instruction in* Cooperative Learning: The Social and Intellectual Outcomes of Learning in Groups edited by Adrian Ashman, Robyn Gillies Routledge.

Obanya, Pai(2014).Educationeering, Ibadan. HEBN Publishers plc.

Offorma, G.C. (2015). Promoting access to internet facilities in tertiary institutions. In Unachukwu, G.C. (ed). Dynamics of Access to Education in Nigeria. The Nigerian Academy of Education Year Book 8. Awka: Scoa Heritage Ltd. 212-226.

Offorma, G.C. &Obiefuna, C.A. (2017). Reflective practice in the 21st century: Movement from 3R to 4Cs in the teaching profession. In Teacher Professionalism Knowledge and Development for Reflective and Inclusive Practices. Ismail, H.A. & Nena Padvilla- Valdez (eds). 2Park Square, Miljoen Park: Routledge. 3-33.

UNESCO, (2013) Sustainable development data digest: Laying The Foundation to measure sustainable development goal 4.

UNESCO. (2015). *Transforming our world: the 2030 Agenda for Sustainable : Development Goals.* UNESCO.

UNESCO, (2015). Getting started with sustainable development goals: A guide for Stakeholders. Sustainable Development Solutions Network. A Global Initiative for the United Nations.

UNESCO, (2016). Education for Sustainable Development Goals: Learning Objectives, Education, 2030. Paris:UNESCO, 7.