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Strengthening Mathematics And Science Education (SMASE) For Improving The Quality Of Teachers in Nigeria

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The education system in Nigeria, especially at the basic education level, teachers who teach mathematics and science need to be confident with what they are teaching, they need to have appropriate techniques and strategies of motivating the pupils. If these subjects are not taught well at the basic education level its extraordinarily hard to get them (pupils/students) back to track, no matter what will be done in the secondary and tertiary level. Teachers as the driving force behind improvements in the education system are in the best position to understand and propose solutions to problems faced by students. Teachers must have access to sustainable, high quality professional development in order to improve teaching and student learning.

Teachers' professional development in Nigeria, however, has long been criticized for its lack of sustainability and ability to produce effective change in teaching and students achievement. Education theorists today believe that a critical component of educational reform lies in providing teachers with various opportunities and supports structures that encourage ongoing improvement in teachers' pedagogy and discipline-specific content knowledge. However, the ongoing reforms in education sector and the need to refocus the Nigeria education system towards the goal of the National Economical Empowerment and Development Strategies (NEEDS) demand that the existing In-service and Education Training (INSET) in Nigeria be refocused. It is against this premise that an INSET programme aimed at Strengthening Mathematics And Science Education (SMASE) for primary and secondary school teachers was conceived. The relevance of the SMASE INSET according to the Project Design Matrix (PDM) was derived from an In-service aimed at enhancing the quality of teachers in terms of positive attitude, teaching methodology, mastery of content, resource mobilization and utilization of locally available teaching and learning materials.

The intervention of Strengthening Mathematics And Science Education (SMASE) in training and re-training of teachers at enhancing quality classroom activities in Mathematics and Science subjects through Activity, Student-centre, Experiments, Improvisation (ASEI)-Plan, Do, See, Improve (PDSI) instructional strategy. This instructional strategy has cultivates learner's mathematical and scientific thinking ability and have provided one of the best regular INSET for primary and secondary Mathematics and Science teachers as observed during the SMASE impact survey in the three piloted states in Nigeria.

To build a common ground for teaching method irrespective of teacher and teaching style School-Based Training (SBT) is now advocated in SMASE, SBT is aimed at improving teaching and learning activities in the classroom through Lesson Study model.

Lesson Study is a teaching improvement and knowledge building process that has its origin in the Japanese elementary education it involves a comprehensive process of planning, observation, analysis and identifying the best approaches in a classroom. This an inquiry approach to professional development that requires teachers to identify an area of instructional interest, collect data to analyses and make instructional changes based on the data. This kind of professional development make teachers acquires current and up to date knowledge in the field of mathematics and science.