

Chapter 11

Women and STEM Education in Nigeria: Progress, Shortcomings, Challenges, and Way Forward

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ABSTRACT

Science, technology, engineering, and mathematics (STEM) education teach the four disciplines in an interdisciplinary and applied approach. Globally, the STEM areas are in the forefront of economic development. The government of Nigeria has already forged partnerships and is drawing upon the technological experience of other countries to build new STEM learning opportunities for Nigerian students. The federal government has established several federal universities of science and technology with the sole purpose of improving the teaching of STEM areas. Traditional education in Nigeria challenges range from poverty, poor school funding, poorly trained teachers, inadequate learning aids, incessant strikes, among others. It is time that Nigeria realizes that women and girls continue to be extremely underrepresented in the sciences and incorporate them in the new programme because ensuring that more girls receive a quality education will reap dividends for the safety, security, and prosperity of the nation and for the next generations.

INTRODUCTION

Science, Technology, Engineering and Mathematics (STEM) is a curriculum based

DOI: 10.4018/978-1-7998-3814-2.ch011

on the idea of educating students in four specific disciplines, which are: science, technology, engineering and mathematics in an interdisciplinary and applied approach. Rather than teach the four disciplines as separate and discrete subjects, STEM integrates them into a cohesive learning paradigm based on real-world applications. Disciplines and fields in the sciences are inter-dependent and indispensable structures of a bigger puzzle aimed at solving human daily challenges (Badmus, 2018). The role of science education in a changing world cannot be undervalued: it is estimated that fully 90 per cent of future jobs will require some form of information and communication technology (ICT) skills, and the fastest growing job categories are related to STEM (science, technology, engineering and mathematics), with many new jobs, in areas such as data analysis, software development and data visualization (Rothwell, 2013). Unfortunately, as the STEM campaign continues, it is becoming increasingly obvious that many schools value the arts just as much as they do science, technology, engineering and mathematics globally. Economically, studies show that graduates in STEM field often make more money than those in the Arts and Humanities but less than those in Business. Many countries are devoting their current educational investment money in the areas of STEM given its importance. The United States of America (USA) is making the programme popular by putting millions in funding for teacher training, grants, research etc. Efforts are being made in other countries like UK, Singapore, and Korea to support STEM education (National Research Council, 2012; Singapore's Ministry of Education, 2012).

PURPOSE OF THE STUDY

This paper offers an overview of women and STEM education in Nigeria and its benefits to women, families, and the society. The paper further details the level of women's participation in STEM areas, progress, shortcomings, and challenges and what can be done to improve the participation and performance of girls and women in STEM in Nigeria. Finally, the paper further showed the role of foreign agencies especially United State of America, Global Partnership for Education and High-Techwomen in furthering the study of STEM by girls and women in Nigerian institutions of higher education.

LITERATURE

STEM was once referred as Science, Technology and Society (STS) in the distant past (Badmus, 2018). The acronym STEM was introduced in 2001 by Scientific Administrators at the U.S. National Science Foundation (NSF) (Sanders, 2009).

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