

INNOVATIONS IN RESEARCH, MATHEMATICS AND COMPUTER SCIENCE EDUCATION

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Preface

Technological consciousness has become the dominant ideology in recent times, since the complexity and rapid pace of technological advances in the world. Many educators are becoming increasingly concerned with the rapid changes taking place in almost all spheres of modern life. It is extremely difficult in this period of globalization and information and communication technology development, when teaching and learning activities are more of learner-centred rather than instructor-centred, to discuss education at any level in isolation with innovations.

Education has been described as the most potent tool for change, human capacity building and national transformation. But one of the challenges facing the sector in Nigeria today is the quality of education obtainable.

The editor of this book titled “Innovations in Research, Mathematics and Computer science education” looked at the essence of incorporating innovations into the Nigerian Education Sector for the attainment of social needs which invariably implies the attainment of educational goals. The editor wrote from the basic conviction that considerable progress can be made in Nigeria through careful injection of new ideas, new methods and techniques or strategies that are essentials, into educational system. The book has clearly provided the much-needed specialized knowledge for the improvement of Nigerian education system. The content is wide, the presentation is lucid and the topics are succinct and cover: Innovative Methods of Teaching Mathematics, Test Item Bias and Implications in External Examinations in Nigeria, Use of Flats Instructional Material in Teaching and Learning of Algebra in Secondary Schools, Using Pi-circular Apparatus in Teaching and Learning Circle Theorem, Students’ Attitudes and Impact Towards Chemistry Laboratory, Differential Item Functioning of WAEC Senior Secondary Certificate Examination Biology Multiple Choice Items, Pedagogical and Innovations in Science and Technology Education: As Keys to Sustainable Development, Implementation of Flipped Classroom Model for Science Instruction, Application of Non-Test Techniques in Evaluating Students’ Performance, Evaluation of Instructional Materials, Application of Computer Audio Animation in Teaching and Learning of English Language at Basic Education Level:

Literacy in Focus, Innovations in Community Resources and Development, Incorporating Inquiry-Based Learning in Biology Classroom, ICT as a 21st Century Standard for Nigerian Teachers, Psychology Implication of Teacher Classroom Behaviour and Impact of Mathematics Scrabble Game as an Instructional Tool for the Learning of Trigonometry.

In all, the author wrote creatively and constructively and convincingly as each topic addressed a particular issue and highlighted a major concern. It is therefore a compendium, meticulously attempted to put together greatly researched ideas of erudite scholars from various areas of specialization. My appreciation goes to other scholars whose works, the authors no doubt, have reproduced or cited especially those that were not properly cited. The book is designed to meet the needs of all students in tertiary institutions, an indispensable text for all educational sector officials who are involved at all levels of educational decision-making, planning and policy implementation.

Professor Casmir N. Ebuoh

Editor, May 2023.

Foreword

As society changes, the skills needed to negotiate the complexities of life also change. In the early 1900s, a person who had acquired simple reading, writing and calculating skills was considered literate. To achieve success in the 21st century, students also need to attain proficiency in science, research, mathematics, technology, as well as gain a thorough understanding of information in all its ramifications. If Nigeria is to develop and build a self-reliant nation, emphasis has to be made continually on the development, growth and restructure of educational technology in our school system.

The authors in this text, “innovations in research, mathematics and computer science education”, has through their thorough research identified that innovations in educational institutions are a collective task which must be vigorously and conscientiously pursued if the goals and objectives of education must be achieved. They have tried and basically succeeded to produce clear accounts and features of innovations as it would interest all stakeholders of education.

The text is an academic enterprise, aimed at elucidating issues that are not only of great interest but very relevant to the process of education in Nigeria. I unreservedly thank the erudite scholars and editors who have contributed in setting this text.

I also appreciate other authors their works have been referenced.

Professor S. Agozie Ezeudu
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